CCD-FX730V
RMT-708

SERVICE MANUAL

US Model
Canadian Model
E Model

Video8 Handycam

A MECHANISM

Differences Manual

For MECHANISM ADJUSTMENTS, refer to the "8 mm Video MECHANICAL ADJUSTMENT MANUAL IV" (9-973-199-11).

- CCD-FX730V is based on model CCD-FX430 (CCD-FX430/FX435/FX530/FX630 SERVICE MANUAL).
  〔Main differences〕
  1. LCD screen addition (SD-14, PD-53 boards addition).
  2. Speaker addition.
  3. REC switch addition on control switch block (FK).
  4. FADER switch addition on control switch block (CK).
  5. Boards are changed.

CCD-FX430		CCD-FX730V	
Name	**Part number**	**Name**	**Part number**
AU-157	A-7063-943-A	AU-175	A-7066-153-A
MA-197	A-7063-941-A	MA-209	A-7066-152-A
DD-64	A-7063-946-A	DD-71	A-7066-154-A
VC-143	A-7063-949-A	VC-151	A-7066-155-A
VS-110	A-7063-944-A	VS-119	A-7066-156-A (US, Canadian) A-7066-210-A (E)

The printed wiring board and schematic diagram for the AU-175 board and MA-209 board are not shown because basically they are identical to the CCD-FX430's AU-157 board and MA-197 board.

- In this service manual, only the differences from CCD-FX430 is mentioned.
  When servicing, see the CCD-FX430/FX435/FX530/FX630 service manual (9-973-530-11) with this.

MICROFILM

8 VIDEO CAMERA RECORDER

SONY

Video Camera Recorder

System

Video recording system
Two rotary heads, Helical scanning FM system
Audio recording system
Rotary heads, FM system
Video signal
NTSC color, EIA standards
Usable cassette
8 mm video format cassette (standard 8 mm)
Tape speed
SP mode: Approx. 19/32 inches (1.43 cm)/second
LP mode: Approx. 5/16 inches (0.72 cm)/second (playback only)
Recording time
SP mode: 2 hours (P6-120)
Playback time
SP mode: 2 hours (P6-120)
LP mode: 4 hours (P6-120)
Fastforward/rewind time
Approx. 6 min 30 sec (P6-120)
Image device
CCD (Charge Coupled Device)
Viewfinder
Electronic viewfinder (monochrome)
Lens
Combined 12 x Power zoom lens
Filter diameter 2 1/8 inches (52 mm)
TTL autofocus system
Inner focus wide macro system
Focal distance
f = 7/32 – 2 5/8 inches (5.4 – 64.8 mm)
F1.8 – 2.7
(1 9/16 – 18 1/2 inches (39 – 468 mm) when converted to a 35 mm still camera)
Color temperature
Auto
Minimum illumination
2 lux (F1.8)
Illumination range
2 lux to 100,000 lux
Recommended illumination
More than 100 lux

LCD screen

Picture
3 inches measured diagonally
2 1/2 x 1 3/4 inches (61.5 x 44.0 mm)
On-screen display
TN LCD/TFT active matrix method
Total dot number: 75,816 (324 x 234)

Input and output connectors

Video input/output
Phono jack, 1 Vp-p, 75 Ω, unbalanced, sync negative
Audio input/output
Phono jack
Input: 7.5 dB, input impedance more than 47 kΩ
Output: 7.5 dB, (at output impedance 47 kΩ)
impedance less than 2.2 kΩ
RFU DC OUT
Special minijack, DC 5 V
Earphone jack
Minijack
LANC control jack
Stereo mini-minijack (ø 2.5 mm)
MIC jack
Minijack, –66 dB low impedance with 2.5 to 3.0 V DC, output impedance 6.8 kΩ (ø 3.5 mm)
Speaker
8 Ω

General

Power requirements
On battery mounting surface
6.0 V (battery pack)
7.5 V (AC power adaptor)
Average power consumption
6.9 W (camera recording) including the viewfinder
Installation
Vertically, horizontally
Operating temperature
32° F to 104° F
(0° C to 40° C)
Storage temperature
– 4° F to +140° F
(–20° C to +60° C)
Dimensions
Approx.
4 3/4 x 4 3/8 x 10 1/4 inches (120 x 111 x 260 mm) (w/h/d)
Mass
Approx. 2 lb 7 oz (1,100 g)
Excluding the battery pack, lithium battery, cassette and shoulder strap
Approx. 3 lb 2 oz (1,430 g)
Including the battery pack NP-66, lithium battery CR2025, cassette P6-120, and shoulder strap
Microphone
Electret condenser microphone, monaural type
Supplied accessories
See page 5.

AC power adaptor

Power requirements
110 – 240 V AC*, 50/60 Hz
Power consumption
17 W
Output voltage
DC OUT: 7.5 V, 1.5 A in operating mode
Battery charge terminal: 10 V, 1.1 A in charge mode
Application
Sony battery packs NP-55H, NP-60D, NP-66/66H, NP-77H, NP-80/80D
Operating temperature
32° F to 104° F
(0° C to 40° C)
Storage temperature
– 4° F to +140° F
(– 20°C to +60°C)
Dimensions
Approx.
4 1/8 x 1 15/16 x 2 1/2 inches (103 x 49 x 63 mm) (w/h/d) including projecting parts and controls
Mass
Approx. 11 oz (320 g) (AC-V25A)
Approx. 10 oz (290 g) (AC-V25B)

* Canadian Standard Association (CSA) certifies 120 V AC only.

Design and specifications are subject to change without notice.

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit board Repairing
   - Keep the temperature of the soldering iron around 270°C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

[Zoom lens]

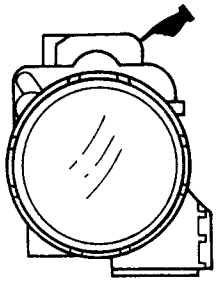
This unit employs two types of lens.
Note that the lenses are interchangeable, however their components are not.

Differentiating the lens

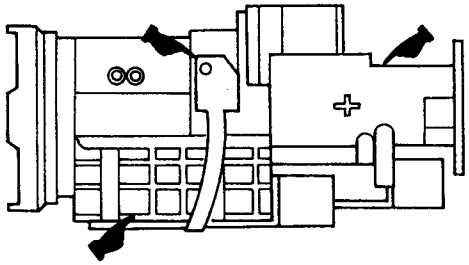
: difference point

TYPE Ⅰ (LSV-140A)

From the front of the lens

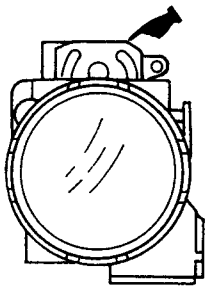


From the right side of the lens (as seen from the front)

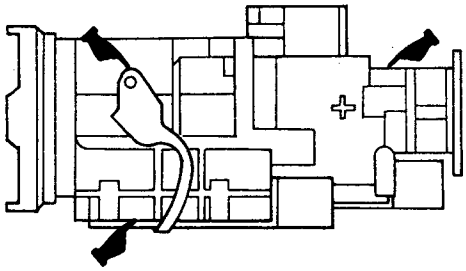


TYPE Ⅱ (VCL-5412WA)

From the front of the lens

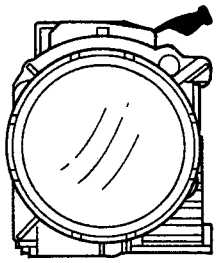


From the right side of the lens (as seen from the front)

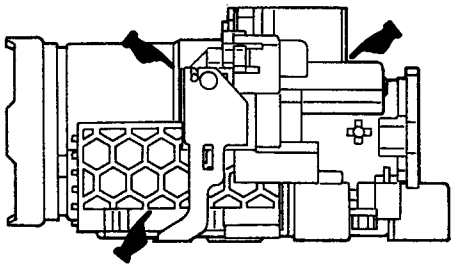


TYPE Ⅲ (VCL-5412WB)

From the front of the lens



From the right side of the lens (as seen from the front)



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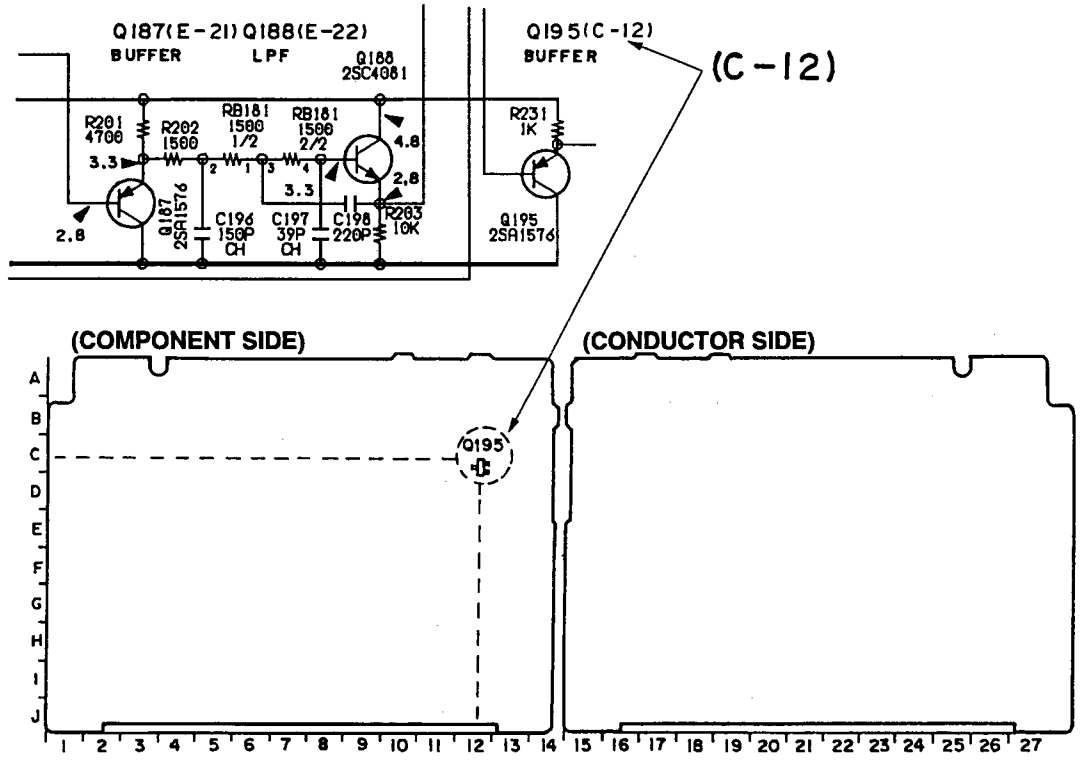
SERVICE NOTE

[PARTS LOCATION DIAGRAM RELATED TO POWER SUPPLY]

The parts location diagram for the power supply which are often checked and replaced when repairing the fuse and IC link and so on. (See pages 4-20, 4-30 and 4-31.)
This diagram is useful for repair.

[SEMICONDUCTOR LOCATION]

In this service manual, the mounted locations of the semiconductors (IC, transistor, diodes) are indicated in red in schematic diagrams. This enables to find the location on the board easily when servicing.



[HEAD CLEANING]

After an extended period of use the video image may become indistinct or may not appear at all during playback of a tape. The cause of this usually are dirty video heads. For remedy, cleaning of the heads is required.

Check for Head Clogs During Recording

① Use a blank tape, record a short section, then press the stop button to stop.
② Set to recording mode again.
③ If the [⊗] mark is flashing in the viewfinder at this time, head clogs are occurred.

Check During Playback of a Tape

① Play back a pre-recorded tape and display the image on a TV screen.
② If there is no sound and the image is unstable, no image appears on the screen, or tape transport is unstable, head clogs are occurred.

Remedy

[Cleaning method using a cleaning tape]

- Use the Cleaning Tape. (Please follow the instructions attached to the cleaning tape.)

Notes and Precautions

As you read through this manual, buttons and settings on the camcorder are shown in capital letters. e.g., "Set the POWER switch to CAMERA.
Photographs taken with a still camera are used for in the descriptions of the images seen in the viewfinder and on the LCD. These photos will differ from what you will actually be able to see in the viewfinder and on the LCD.

Note on TV Color Systems

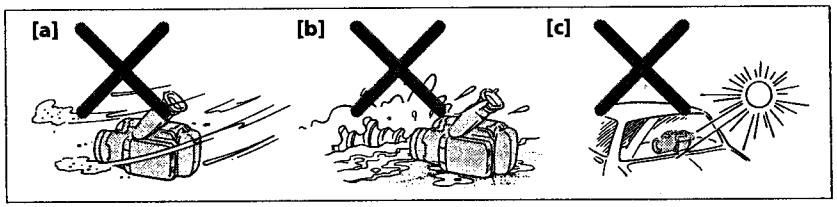
TV color systems differ from country to country. To view your recordings on a TV, you need an NTSC system-based TV. When you want to use a PAL-M system-based TV, you will need an NTSC/PAL-M transcoder (as this is an NTSC system based camcorder). Please check the list on page 39 to find out the TV color system used in your country.

Precaution on Copyright

Television programs, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

Precautions on Camcorder Care

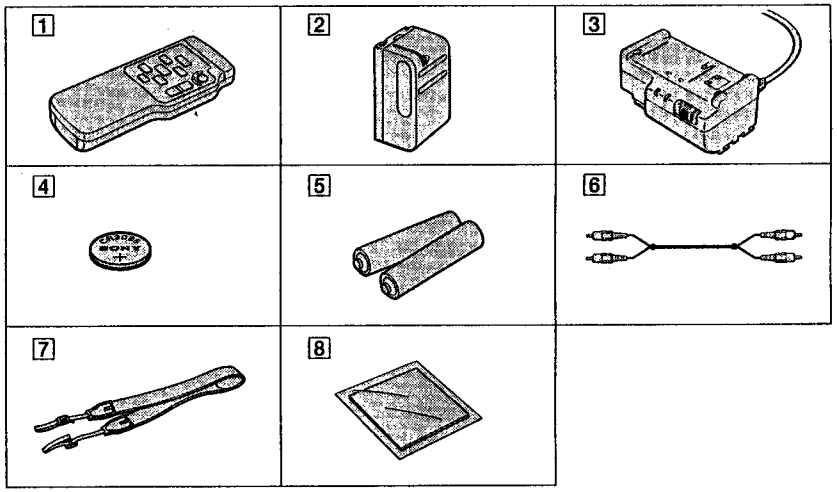
- **Do not let sand get into the camcorder. When you use the camcorder on a sandy beach or dusty place, protect it from the sand or dust. Sand or dust may cause the unit to malfunction and sometimes the malfunction cannot be repaired. [a]**
- **Do not let the camcorder get wet. Keep the camcorder away from rain and sea water. Letting the camcorder get wet may cause the unit to malfunction and sometimes the malfunction cannot be repaired. [b]**
- **Never leave the camcorder exposed to temperatures above 140°F (60°C), such as in a car parked in the sun or under direct sunlight. [c]**



Please also refer to the precautions starting on p. 37 in addition to the above precautions.

Checking Supplied Accessories

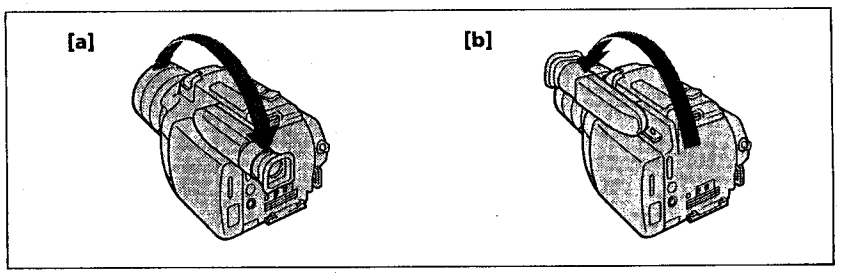
Check that the following accessories are supplied with your camcorder.



1 **Wireless remote commander** (1) (p. 47)
2 **NP-66 battery pack** (1) (p. 6)
3 **AC-V25A/V25B AC power adaptor** (1) (p. 6, 18)
4 **CR2025 lithium battery** (1) (p. 30)
(The lithium battery is already installed in your camcorder.)
5 **Size AA (R6) battery for remote commander** (2) (p. 47)
6 **A/V connecting cable** (1) (p. 27)
7 **Shoulder strap** (1) (p. 46)
8 **LCD screen cleaner cloth** (p. 38)

After Taking the Camcorder out of the Box

Turn the viewfinder barrel in the direction of the arrow **[a]**. When storing your camcorder, turn the viewfinder barrel in the direction of the arrow **[b]**.



This section is extracted from instruction manual.

CCD-FX730V

Charging and Installing the Battery Pack

Before using your camcorder, you first need to charge and install the battery pack. To charge the battery pack, use the supplied AC-V25A/V25B AC power adaptor.

Charging the Battery Pack

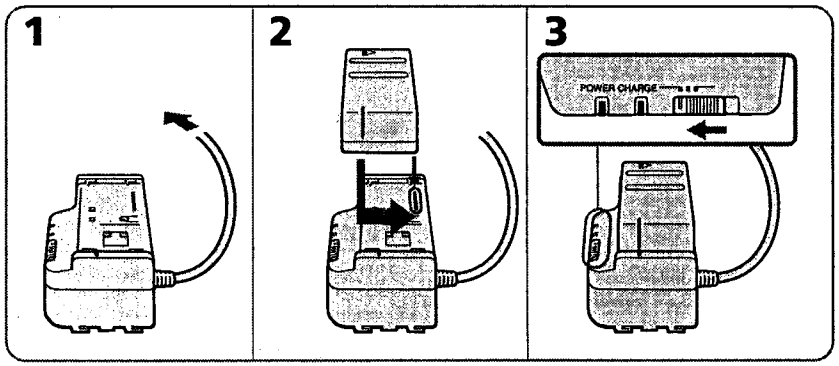
Charge the battery pack on a flat surface without vibration.

(1) Connect the power cord to a wall outlet.

(2) Align the right side of the battery pack with the line on the AC power adaptor, then slide the battery pack in the direction of the arrow.

(3) Set the selector to CHARGE. The CHARGE lamp (orange) lights up. Charging begins.

When charging is completed, the CHARGE lamp goes out. Set the selector to the center position and unplug the unit from the wall outlet. Then remove the battery pack and install it on the camcorder. To stop charging, set the selector to the center position.



Charging Time

Battery pack	NP-66 (supplied)	NP-80 NP-80D	NP-77H	NP-66H	NP-60D	NP-55H
Charging time*	70	180	160	120	90	80

* Approximate minutes to charge an empty battery pack using the AC-V25A/V25B (Lower temperatures require a longer charging time.)

Battery Life

Battery Pack		NP-66 (supplied)	NP-80 NP-80D	NP-77H	NP-66H	NP-60D	NP-55H
While recording**	LCD open	40 (75)	80 (150)	70 (135)	55 (100)	35 (70)	35 (65)
	LCD close	50 (90)	95 (180)	85 (160)	65 (120)	45 (85)	40 (75)
While playing back on LCD***		90	180	160	120	85	75

** Approximate minutes when recording while you repeat recording start/stop or zooming and turning the power on/off. The actual battery life may be shorter.
Approximate continuous recording time indoors is indicated in parentheses.

*** Approximate continuous playback time indoors.

Important!

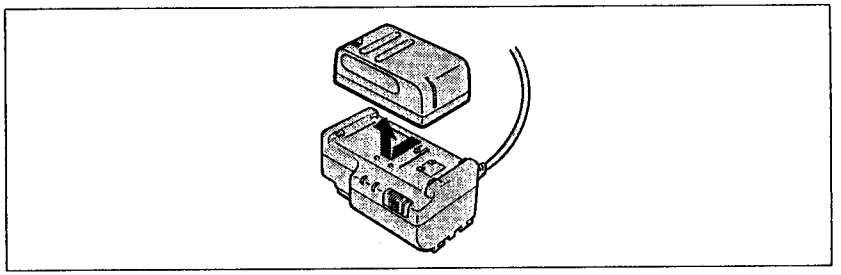
Use the battery completely before re-charging!

Before you recharge the battery pack, make sure the battery has been used up (discharged) completely. Repeated charging while some capacity remains causes a lowering of battery capacity. However, the original battery capacity can be recovered if you use the battery completely and charge it fully again.

To use up the battery, remove the cassette and slide the POWER switch to CAMERA with the battery pack attached, and leave the camcorder until the ⌧ indicator flashes and the red lamp flashes rapidly in the viewfinder or on the LCD screen.

Removing the Battery Pack

Slide the battery pack in the direction of the arrow.



Notes on charging the battery pack

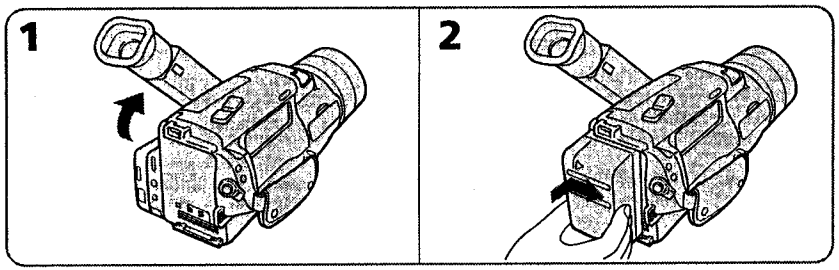
- The POWER lamp will remain lit for a while even if the battery pack is removed and the power cord is unplugged after charging the battery pack. This is normal.
- If the POWER lamp does not light, set the selector to the center position and disconnect the power cord. After about one minute, reconnect the power cord and set the selector to CHARGE again.
- You cannot operate the camcorder using the AC power adaptor while charging the battery pack.

See the next page for further information.

Charging and Installing the Battery Pack

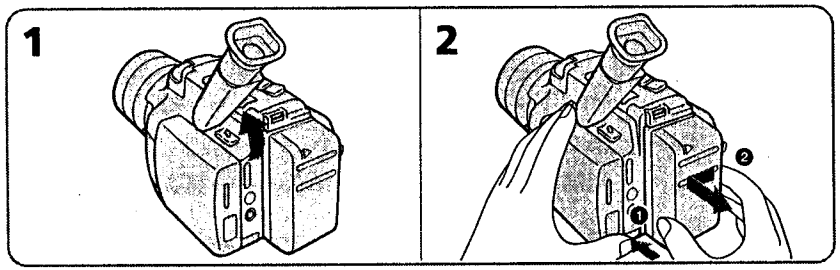
Installing the Battery Pack

(1) Lift up the viewfinder.
(2) Align the right side of the battery pack with the white line on the camcorder, and slide the battery pack to the right.



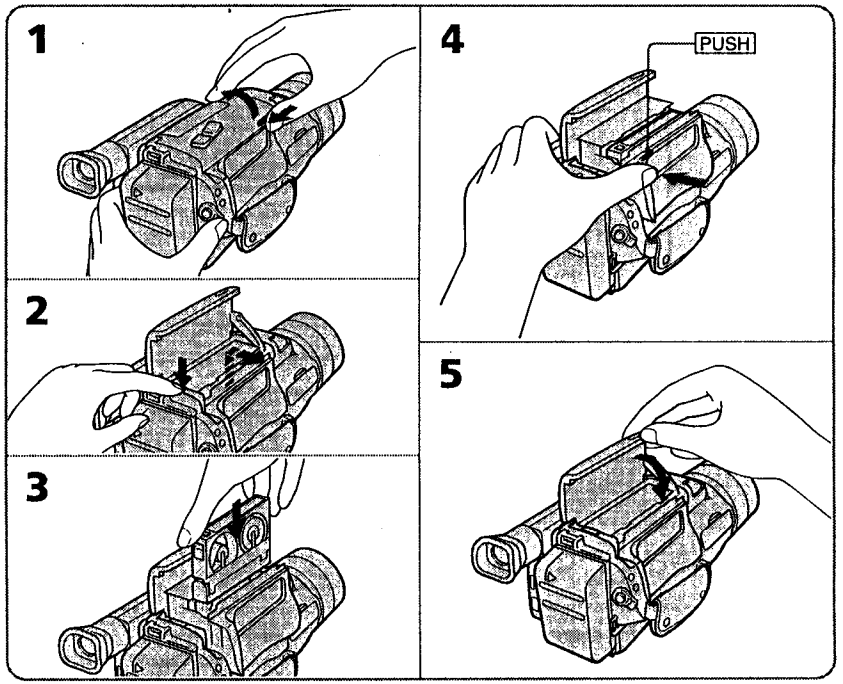
To Remove the Battery Pack

(1) Lift up the viewfinder.
(2) While pressing BATT, slide the battery pack to the left.



Inserting a Cassette

Make sure that the power source is installed.
(1) While sliding the lid lock in the direction of the arrow, lift up the lid.
(2) Press EJECT. The cassette compartment automatically lifts up and opens.
(3) Insert a cassette with the window facing out.
(4) Close the cassette compartment by pressing the "PUSH" mark on the cassette compartment.
(5) After the cassette compartment has gone down, close the lid.

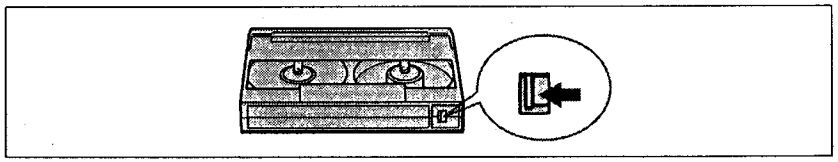


To Eject the Cassette

While sliding the lid lock in the direction of the arrow, lift up the lid of the cassette holder and press EJECT.

Preventing Accidental Erasure

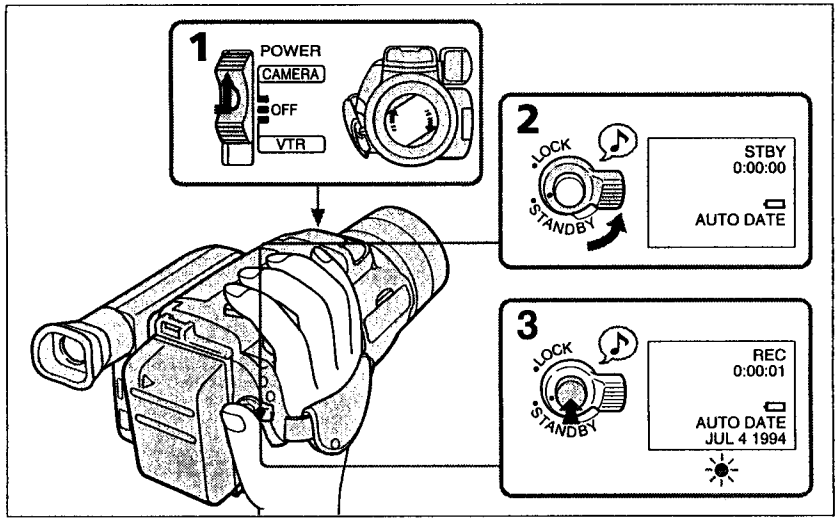
To prevent accidental erasure, slide the tab on the cassette to expose the red mark. If you try to record with the red mark exposed, the ⌧ and ⏏ indicators flash in the viewfinder, and you cannot record. To re-record on this tape, slide the tab back out covering the red mark.



Camera Recording

Make sure that the power source is installed and a cassette is inserted. The date is automatically recorded for 10 seconds after you start recording (AUTO DATE feature). This feature works only once a day. You can hear the BEEP sound to confirm your operation.
Before you record one-time events, you may want to make a trial recording to make sure that the camcorder is working correctly.

(1) While pressing the small green button on the POWER switch, slide it to CAMERA.
(2) Turn STANDBY up.
(3) Press START/STOP. The camcorder starts recording. The "REC" indicator appears and the red lamp lights up in the viewfinder. The camera recording/battery lamp on the viewfinder barrel also lights up.

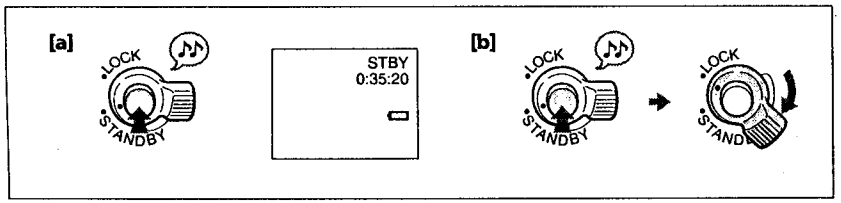


To Stop Recording Momentarily [a]

Press START/STOP again. The "STBY" indicator appears in the viewfinder (**Standby mode**).

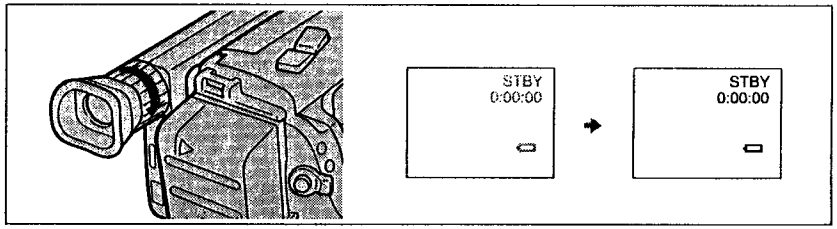
To Finish Recording [b]

Press START/STOP again. Turn STANDBY down and slide the POWER switch to OFF. The lens cover closes. Then, eject the cassette (p. 9) and remove the battery pack (p. 8).



To Focus the Viewfinder Lens

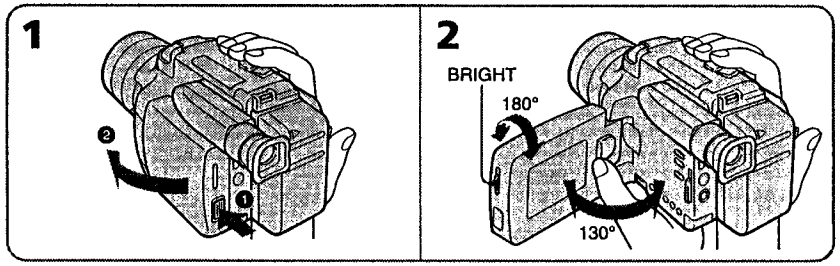
If the viewfinder is not in focus at all or when you use the camcorder after someone else has used it, focus the viewfinder lens. Turn the viewfinder lens adjustment ring so that the indicators in the viewfinder come into sharp focus.



Using the LCD Screen

You can also record the picture while looking at the LCD screen.
When using the LCD screen, the viewfinder screen turns off automatically.

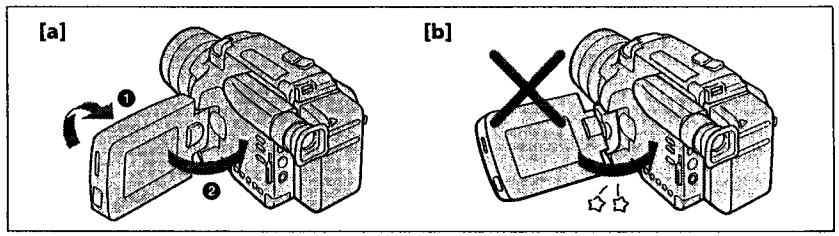
(1) While pressing PUSH OPEN, open the LCD panel.
(2) Adjust the angle of the LCD panel.
To adjust the brightness of the LCD screen, turn the BRIGHT dial.



The battery life is longer when the LCD panel is closed. Use the viewfinder instead of the LCD screen to save the battery power.

Caution on the LCD panel

Turn the LCD panel vertically until it clicks when closing the LCD panel **[a]**. Otherwise, the camcorder body may be damaged or the LCD panel may not close properly **[b]**.
Close the LCD panel completely when not in use.



See the next page for further information.

Note on Standby mode
If you leave the camcorder in Standby mode for 5 minutes while the cassette is inserted, the camcorder turns off automatically. This prevents wearing down the battery and wearing out the tape. To resume Standby mode, turn STANDBY down once and turn it up again. To start recording, press START/STOP.

Note on recording
When you record from the beginning of a tape, run the tape for about 15 seconds before starting the actual recording. This will ensure that you won't miss any start-up scenes when you play back the tape.
You can record tapes in SP (standard play) mode only.

Note on the tape counter
The tape counter indicates the recording or playback time. Use it as a guide. There will be a time lag of several seconds from the actual time. To set the counter to zero, press COUNTER RESET.

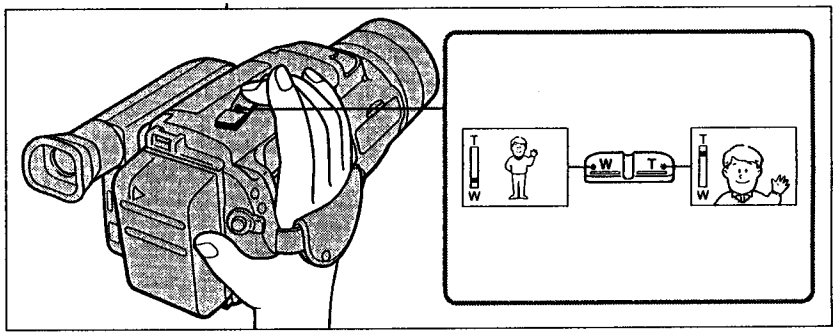
Note on beep sound
As indicated by the ♪ mark in the illustrations, a beep sounds when you turn the power on or when you start recording and two beeps sound when you stop recording, confirming the operation. Several beeps also sound as a warning of any unusual condition of the camcorder (p. 50).
Note that the beep sound is not recorded on the tape. If you do not want to hear the beep sound, select "OFF" in the menu system.

Note on the AUTO DATE feature
The clock is set to the East Coast Standard Time at the factory, but you can reset the clock in the menu system (p. 31). You can change the AUTO DATE settings by selecting ON or OFF in the menu system.
The AUTO DATE feature works once a day. However, the date may automatically appear more than once a day when:
- you reset the date and time.
- you eject and insert the tape again.
- you stop recording within 10 seconds.
- you set AUTO DATE to OFF once and set to ON again in the menu system.

When moving from indoors to outdoors (or vice versa)
Turn STANDBY up and point the camcorder at a white object for about 15 seconds so that the white balance is properly adjusted.

Using the Zoom Feature

Zooming is a recording technique that lets you change the size of the subject in the scene.
For more professional-looking recordings, use the zoom function sparingly.
"T" side: for telephoto (subject appears closer)
"W" side: for wide-angle (subject appears farther away)



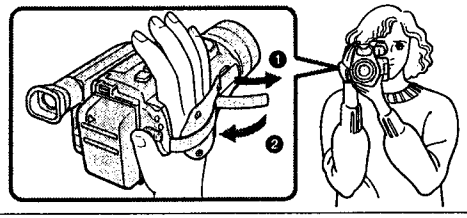
Zooming Speed (Dual speed zooming)
Press the power zoom button firmly for a high-speed zoom; press it softly for a relatively slow zoom.

When you shoot a subject using a telephoto zoom
If you cannot get a sharp focus while in extreme telephoto zoom, press the "W" side of the power zoom button until the focus is sharp. You can shoot a subject that is at least about 3 1/4 feet (100 cm) away from the lens surface in the telephoto position, or about 1/2 inches (1 cm) in the wide-angle position.

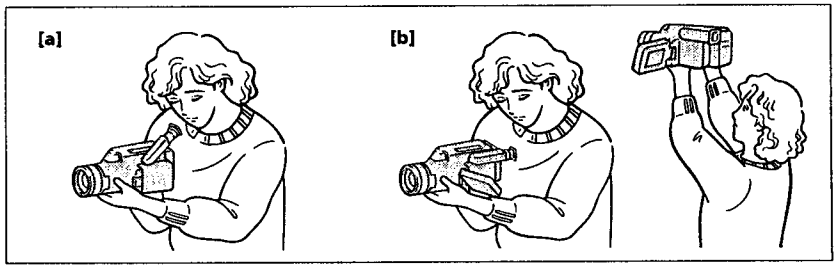
Hints for Better Shooting

For hand-held shots, you'll get better results by holding the camcorder according to the following suggestions:

- Hold the camcorder firmly and secure it with the grip strap so that you can easily manipulate the controls with your thumb.



- Place your right elbow against your side.
- Place your left hand under the camcorder to support it.
- Place your eye firmly against the viewfinder eyecup.
- Use the viewfinder frame as a guide to determine the horizontal plane.
- You can record in a low position to get an interesting recording angle. Lift the viewfinder up for recording from a low position. (You can turn it up to 180 degrees.) **[a]**
- You can also record in a low position or even in a high position using the LCD panel. **[b]**

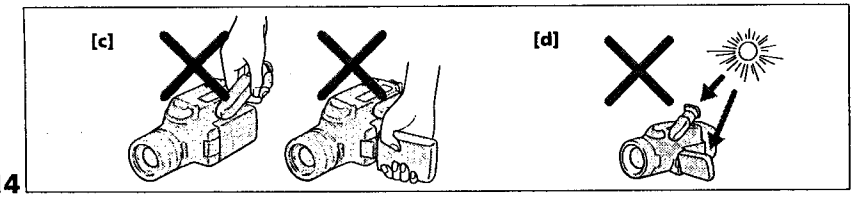


Place the camcorder on a flat surface or use a tripod

Try placing the camcorder on a table top or any other flat surface of suitable height. If you have a tripod for a still camera, you can also use it with the camcorder (p. 44). When attaching a non-Sony tripod, make sure that the length of the tripod screw is less than 9/32 in (6.5 mm). Otherwise, the screw may damage the inner parts of the camcorder.

Cautions on the viewfinder and the LCD

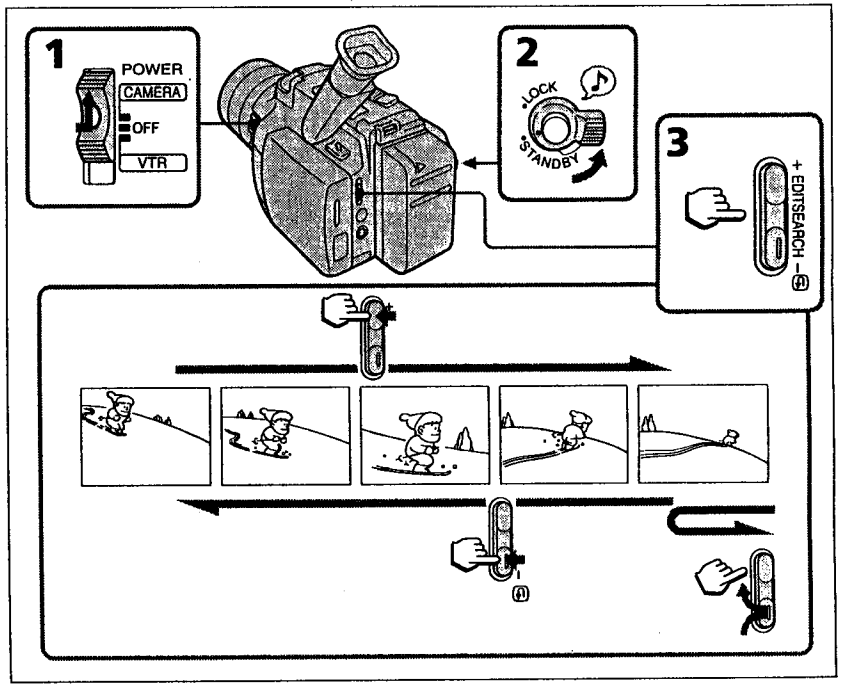
- Do not pick up the camcorder by the viewfinder or by the LCD panel. **[c]**
- Do not place the camcorder so as to point the viewfinder or the LCD screen toward the sun. The inside of the viewfinder or the LCD panel may be deformed. Be careful when placing the camcorder under sunlight or by the window. **[d]**



Checking the Recorded Picture

The EDITSEARCH function is used to view the recorded picture for a moment during recording. Using EDITSEARCH, you can review the last recorded scene or check the recorded picture in the viewfinder. You can also review the picture on the LCD screen.

(1) While pressing the small green button on the POWER switch, slide it to CAMERA.
(2) Turn STANDBY up.
(3) Press the – (⏪) side of EDITSEARCH momentarily; the last few seconds of the recorded portion plays back (**Rec Review**). You can also monitor the sound by using an earphone (not supplied).
Hold down the – side of EDITSEARCH until the camcorder goes back to the scene you want. The last recorded portion is played back. To go forward, hold down the + side (**Edit Search**).

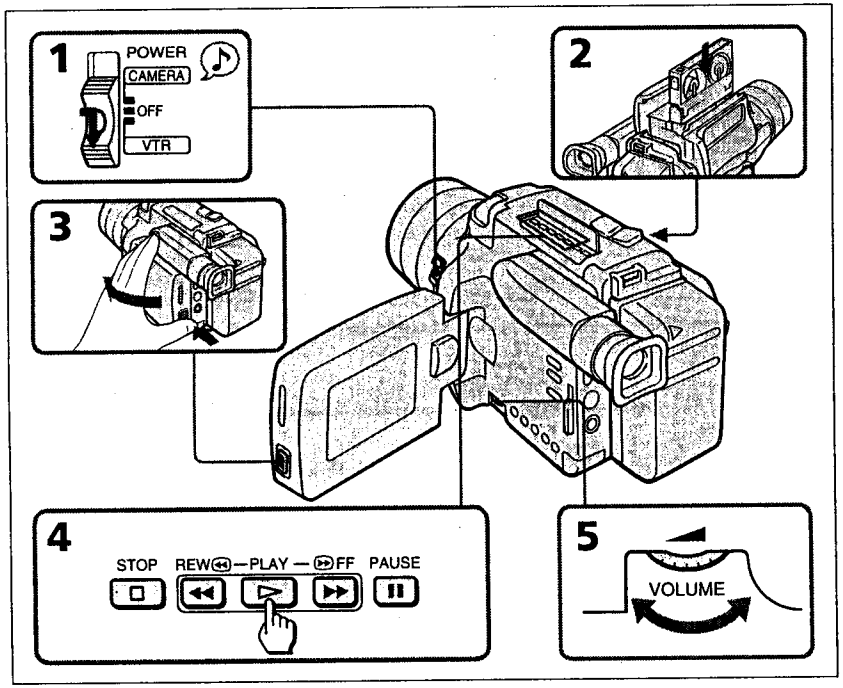


To Begin Re-recording

Press START/STOP. Re-recording begins from the point you released EDITSEARCH. Provided you do not eject the tape, the transition between the last scene you recorded and the next scene you record will be smooth.

Playing Back a Tape

You can monitor the playback picture on the LCD screen.
(1) While pressing the small green button on the POWER switch, slide it to VTR.
(2) Insert the recorded tape with the window facing out.
(3) While pressing PUSH OPEN, open the LCD panel. Adjust the angle of the LCD panel or the brightness of the LCD screen if necessary (p. 11).
(4) Press ▷ to start playback.
(5) Adjust the volume using VOLUME.
You can also monitor the picture on a TV screen, after connecting the camcorder to a TV or VCR (p. 27).



To Stop Playback
Press □ during playback.

To Rewind the Tape
Press ◀◀.

To Advance the Tape Rapidly
Press ▶▶

Note on DISPLAY button
Press DISPLAY to erase the screen indicators on the LCD screen. To display the indicators, press again. The indicators don't appear on the TV.

Using an earphone
Connect an earphone (not supplied) to the 🎧 jack. You can adjust the volume of the earphone using VOLUME.

To view the playback picture in the viewfinder
Close the LCD panel. The viewfinder turns on automatically. When using the viewfinder, you can monitor the sound only by using an earphone.
To view on the LCD screen again, open the LCD panel. The viewfinder turns off automatically.

Various Playback Modes

To View a Still Picture (Playback pause)
Press ❚❚ during playback. To resume playback, press ❚❚ or ▷.

To Locate a Scene (Picture search)
Keep pressing ◀◀ or ▶▶ during playback. To resume normal playback, release the button.

To Monitor the High-speed Picture while Advancing the Tape or Rewinding (Skip scan)
Keep pressing ◀◀ while rewinding or ▶▶ while advancing the tape. To resume normal playback, press ▷.

To View the Picture in a Sequence of Stop-motion Images
Press EDITSEARCH in Playback pause mode. If you keep pressing EDITSEARCH, you can view the picture play back in the forward (+) or reverse (–) direction.

To View the Picture at 1/5 Speed (Slow playback) (only with the Remote Commander)
Press ❚▶ on the Remote Commander during playback. To resume normal playback, press ▶. If slow playback lasts for about 1 minute, it shifts to normal speed automatically.

Notes on playback
- Streaks appear and the sound is muted in the various playback modes.
- When Playback pause mode lasts for 5 minutes, the camcorder automatically enters stop mode.

Advanced Operations

Using Alternative Power Sources

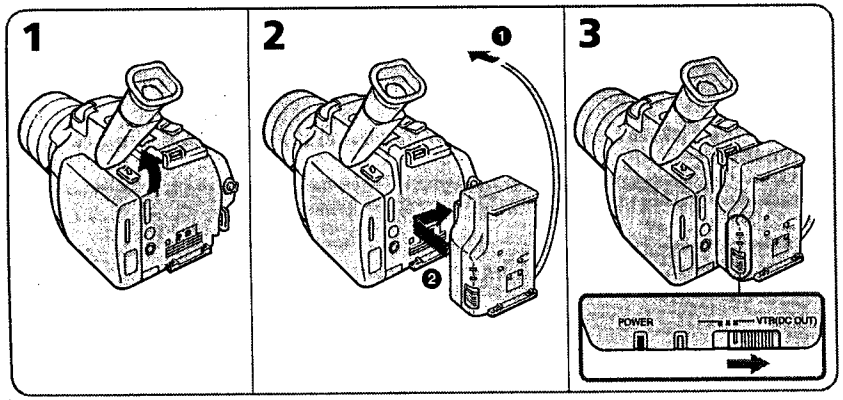
You can choose any of the following power sources for your camcorder: battery pack (p. 6), house current, and 12/24 V car battery. Choose the appropriate power source depending on where you want to use your camcorder.

Place	Power source	Accessory to be used
Indoors	House current	AC power adaptor AC-V25A/V25B (supplied), AC-S10, AC-V55
Outdoors	Battery pack	Battery pack NP-66 (supplied), NP-55H, NP-60D, NP-66H, NP-77H, NP-80, NP-80D
In the car	12 V or 24 V car battery	DC pack DCP-77

Note on power sources
Disconnecting the power source or removing the battery pack during recording or playing may damage the inserted tape. If this happens, restore the power supply again immediately.

Using House Current

To use the supplied AC-V25A/V25B AC power adaptor:
(1) Lift up the viewfinder.
(2) Connect the AC power cord to a wall outlet. Connect the bottom of the AC power adaptor to the battery mounting surface of the camcorder.
(3) Set the selector to VTR (DC OUT).



Notes on the POWER lamp
- The POWER lamp will remain lit for a while even if the unit is unplugged after use. This is normal.
- If the POWER lamp does not light, set the selector to the center position and disconnect the power cord. After about one minute, reconnect the power cord and set the selector to VTR (DC OUT) again.

To Remove the Adaptor
The adaptor is removed in the same way as the battery pack. (p. 8)

Using a Car Battery

Use the DCP-77 DC pack (not supplied). Connect the cord of the DC pack to the cigarette lighter socket of the car (12 V or 24 V). Connect the DC pack to the battery mounting surface of the camcorder.

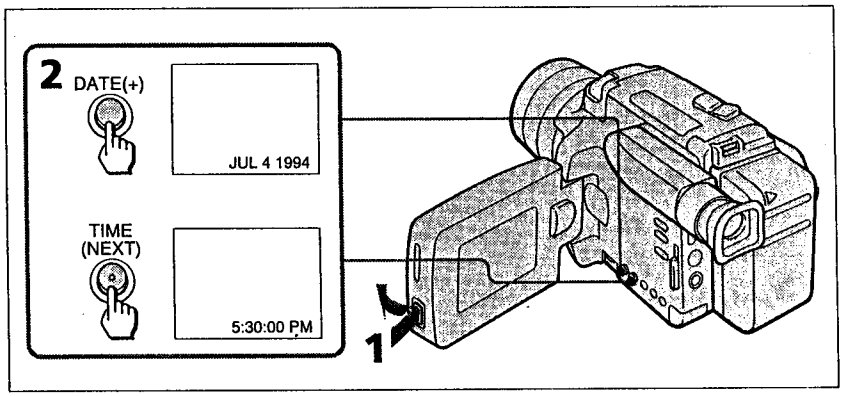
To Remove the DC Pack
The DC pack is removed in the same way as the battery pack. (p. 8)

Options for Charging the Battery Pack

- AC-S10 AC power adaptor:
  You can charge a battery pack whether it is used up or not with this adaptor because it has a discharging function.
- BC-S10 portable battery charger (ideal for travel):
  You can charge a battery pack on 100 – 240 V AC current.

Recording with the Date or Time

You can record the date or time displayed on the LCD screen or in the viewfinder with the picture. You cannot record the date and time at the same time. Except for the date or time indicator, no indicator on the LCD screen or in the viewfinder is recorded.
The clock is set to the East Coast Standard Time at the factory. You can reset the clock in the menu system (p. 31).
(1) While pressing PUSH OPEN, open the LCD panel.
(2) Press DATE(+) or TIME(NEXT) before you start recording.



To Stop Recording with the Date or Time
Press DATE(+) or TIME(NEXT) again. The date or time indicator disappears. The recording continues without the date or time.

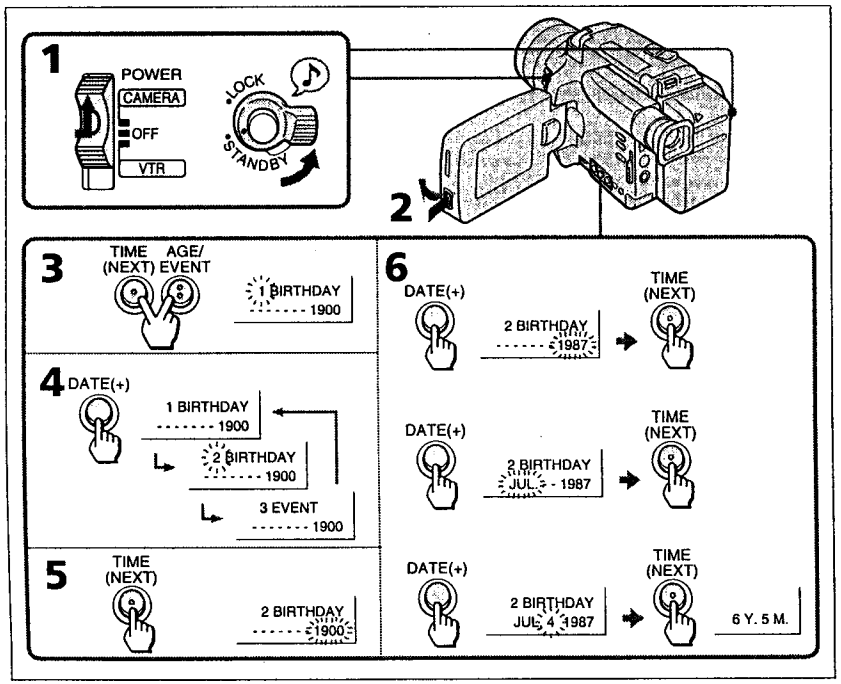
Recording with the Age

By presetting your child's birth date in your camcorder, you can record with your child's age in years and months. Once you enter the birth date of your child, the camcorder's clock will automatically update the age of your child. You can preset up to three birth dates or events in the camcorder's memory.

Storing a Birth Date in Your Camcorder

Before storing a birth date, make sure a power source and the lithium battery are installed, and the date setting is correct. The following procedure stores "Jul. 4 1987" in memory number 2 as an example.

(1) Set the camcorder in Standby mode.
(2) While pressing PUSH OPEN, open the LCD panel.
(3) Press TIME(NEXT) and AGE/EVENT simultaneously for a few seconds until the "1 BIRTHDAY --- -- 1900" indicator appears in the viewfinder or on the LCD screen.
(4) Press DATE(+) to select "2 BIRTHDAY".
(5) Press TIME(NEXT). The "1900" indicator flashes.
(6) Enter the birth date by adjusting the flashing indicators of the year, month and day by pressing DATE(+) and TIME(NEXT). Note that when you hold down DATE(+), the digits advance faster.



Erasing the Age Indicator

Press AGE/EVENT repeatedly until no indicator appears.

If You Missed the Correct Number with DATE(+)

Keep pressing DATE(+).
The year indicator changes as follows:

"1900" → "1901" → --- → Current year
↑ Current year minus 99 ←

To Correct the Setting

Repeat steps from 3 to 6.

To Preset the Year before 1900

(1) After step 5, keep pressing DATE(+) until the current year is displayed.
(2) Press DATE(+) again. The year goes back 99 years.
(3) Go to step 6.

When in 2000

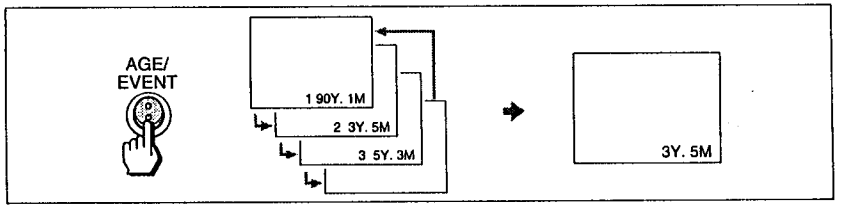
"--- -- 1901" is displayed in step 3. After that, it advances every year as "1902, 1903 .....".

To Cancel the Stored Birth Date

(1) Press AGE/EVENT and TIME(NEXT) simultaneously until "1 BIRTHDAY" appears. Press DATE(+) to select a birth date to cancel.
(2) Press TIME(NEXT) twice. The month indicator flashes.
(3) Press DATE(+) repeatedly until " --- -- " appears.
(4) Press TIME(NEXT). The selected birth date is canceled from the memory and will not be displayed when you press AGE/EVENT.

Recording with the Age

You can record the time elapsed since the date set, for example, your child's birthday. Except for the age, date or time (p. 19) indicator, no indicator on the LCD screen or in the viewfinder is recorded. Make sure the age is set. While recording, press AGE/EVENT to select memory 1, 2 or 3.



Note on the age indicator

Each time you press AGE/EVENT, the indicator changes from 1 "The first age" to 2 "The second age", 3 "The third age" and back to no indicator. Items for which no setting has been made will be skipped. The 1, 2 or 3 indicator disappears after one second.

To Stop Recording with the Age

Press AGE/EVENT repeatedly until the age indicator disappears.

To Correct the Age Settings while Recording

Press AGE/EVENT repeatedly until the desired age appears. The recording starts after the 1, 2 or 3 indicator disappears.

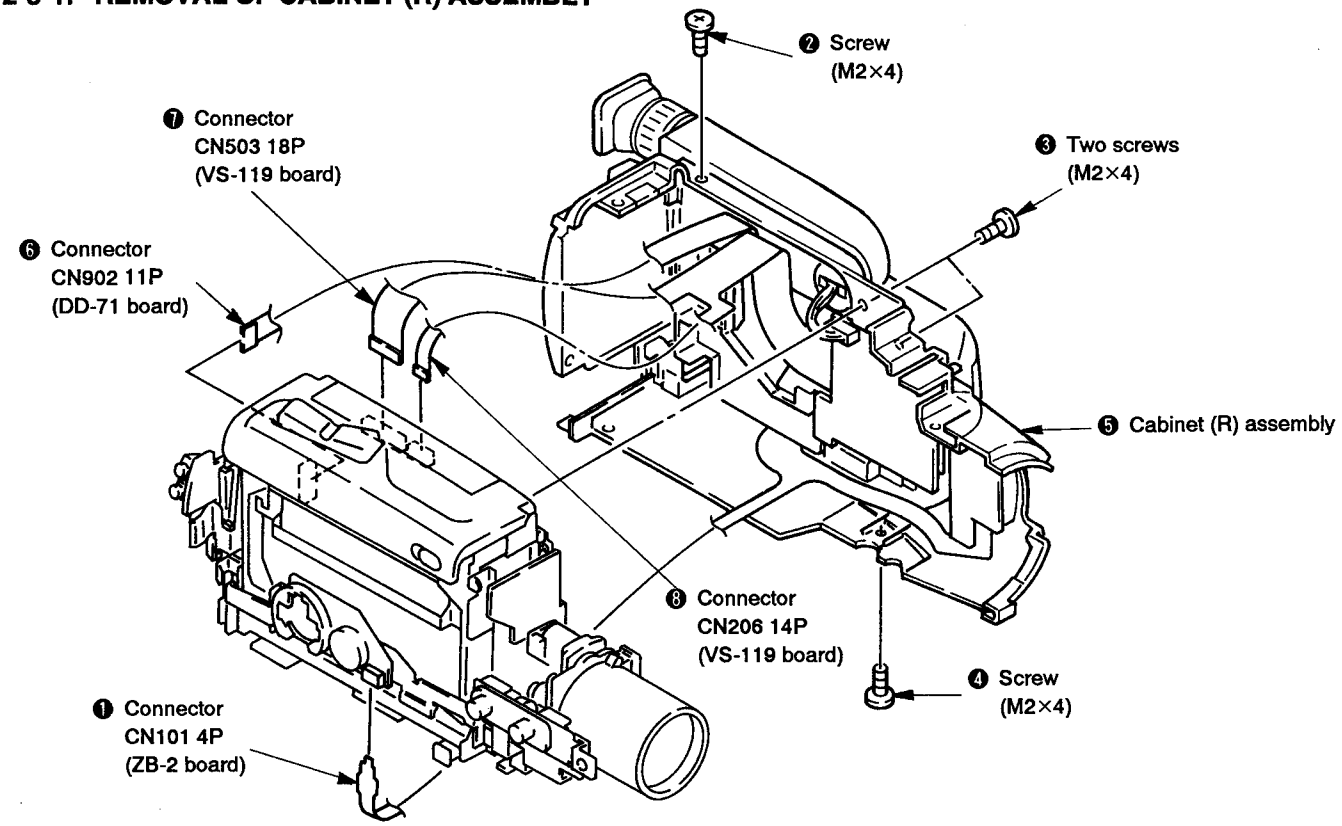
9-973-606-11

Sony Corporation
Consumer A&V Products Company
Personal A&V Products Div.

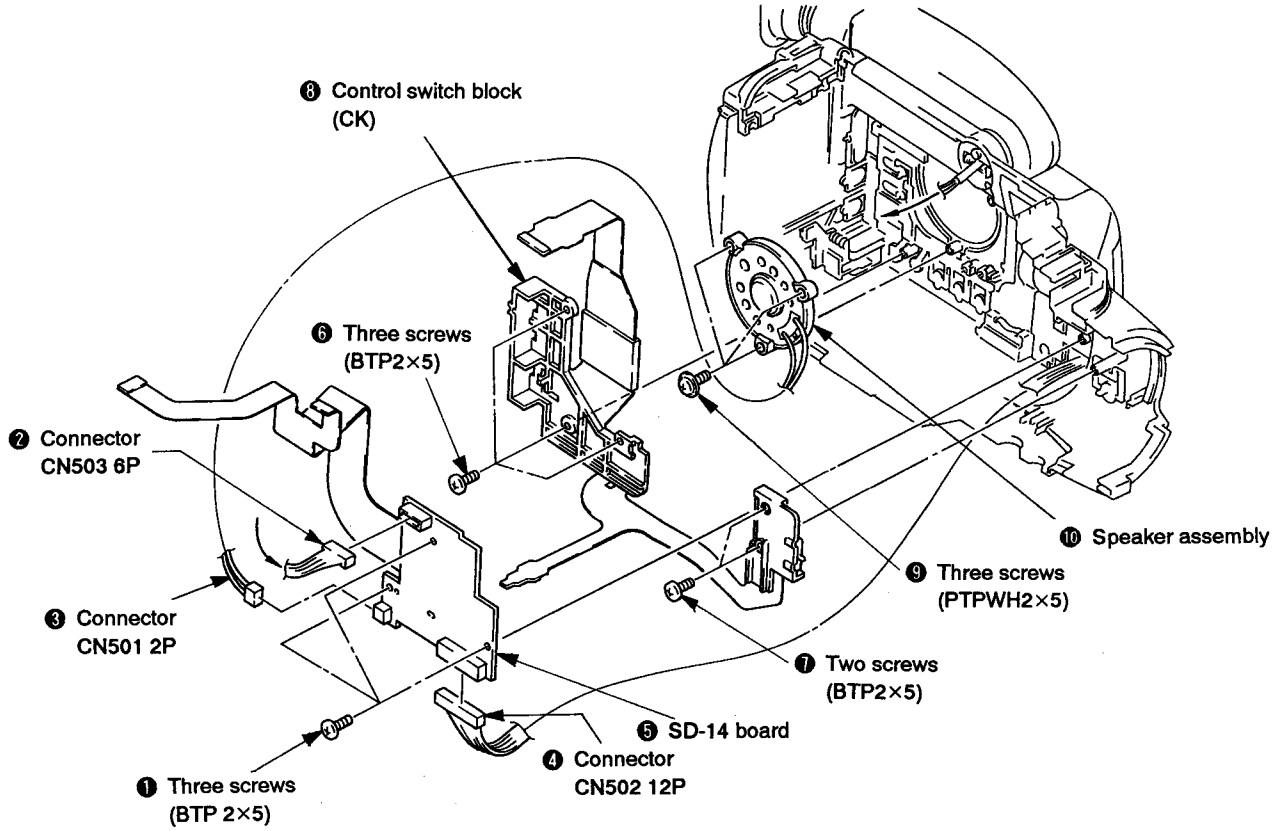
English
94G0939-1
Printed in Japan
© 1994. 7
Published by Personal A&V Products Div.
Quality Engineering Dept.

SECTION 2
DISASSEMBLY

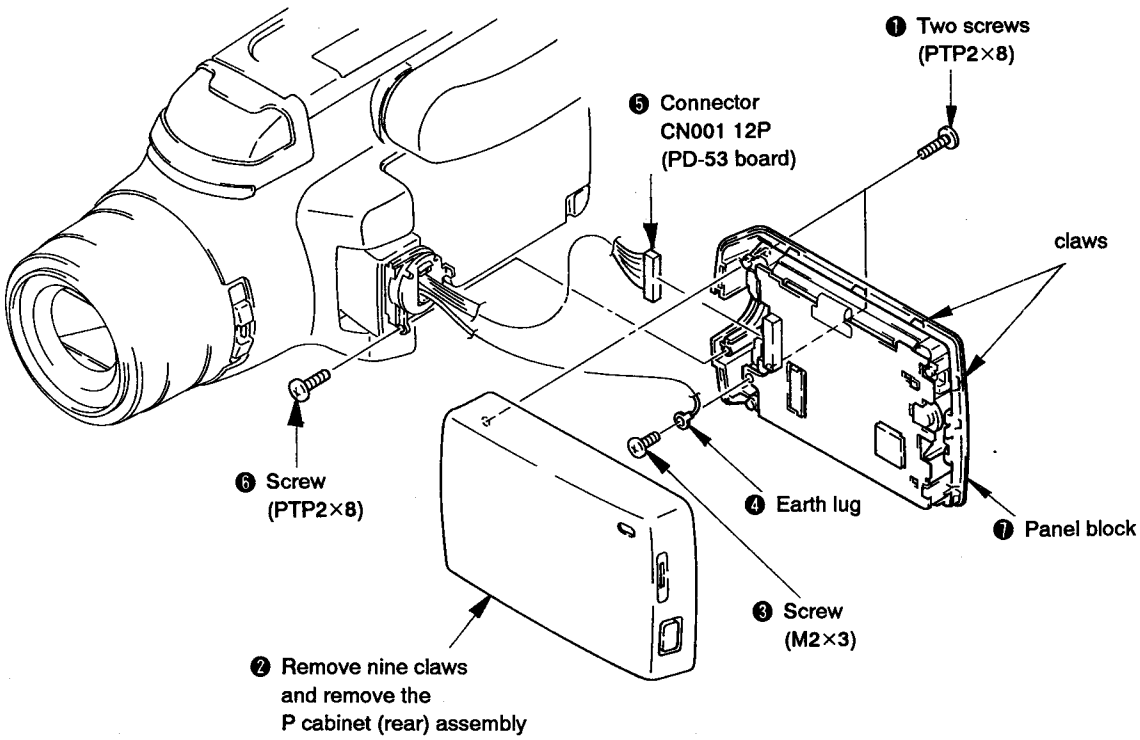
2-5-1. REMOVAL OF CABINET (R) ASSEMBLY



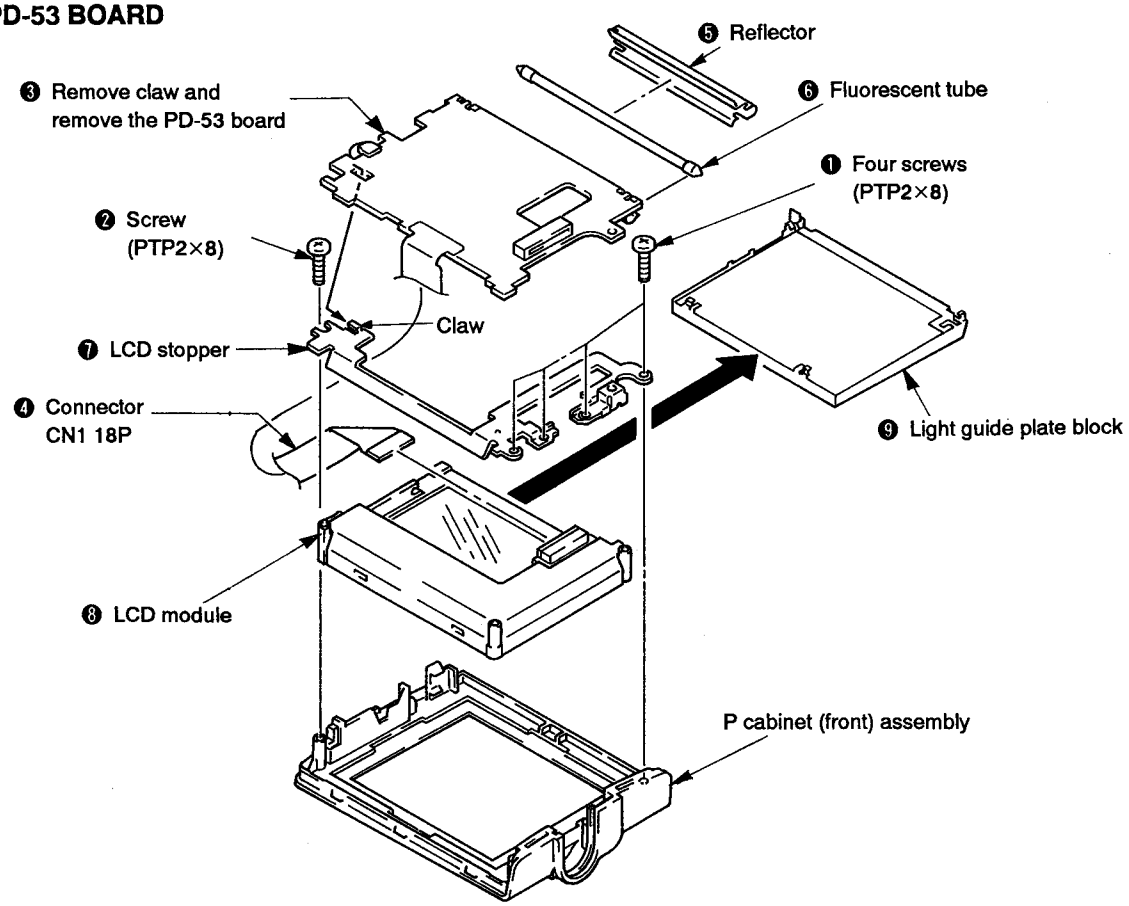
2-5-2. REMOVAL OF CONTROL SWITCH BLOCK (CK)



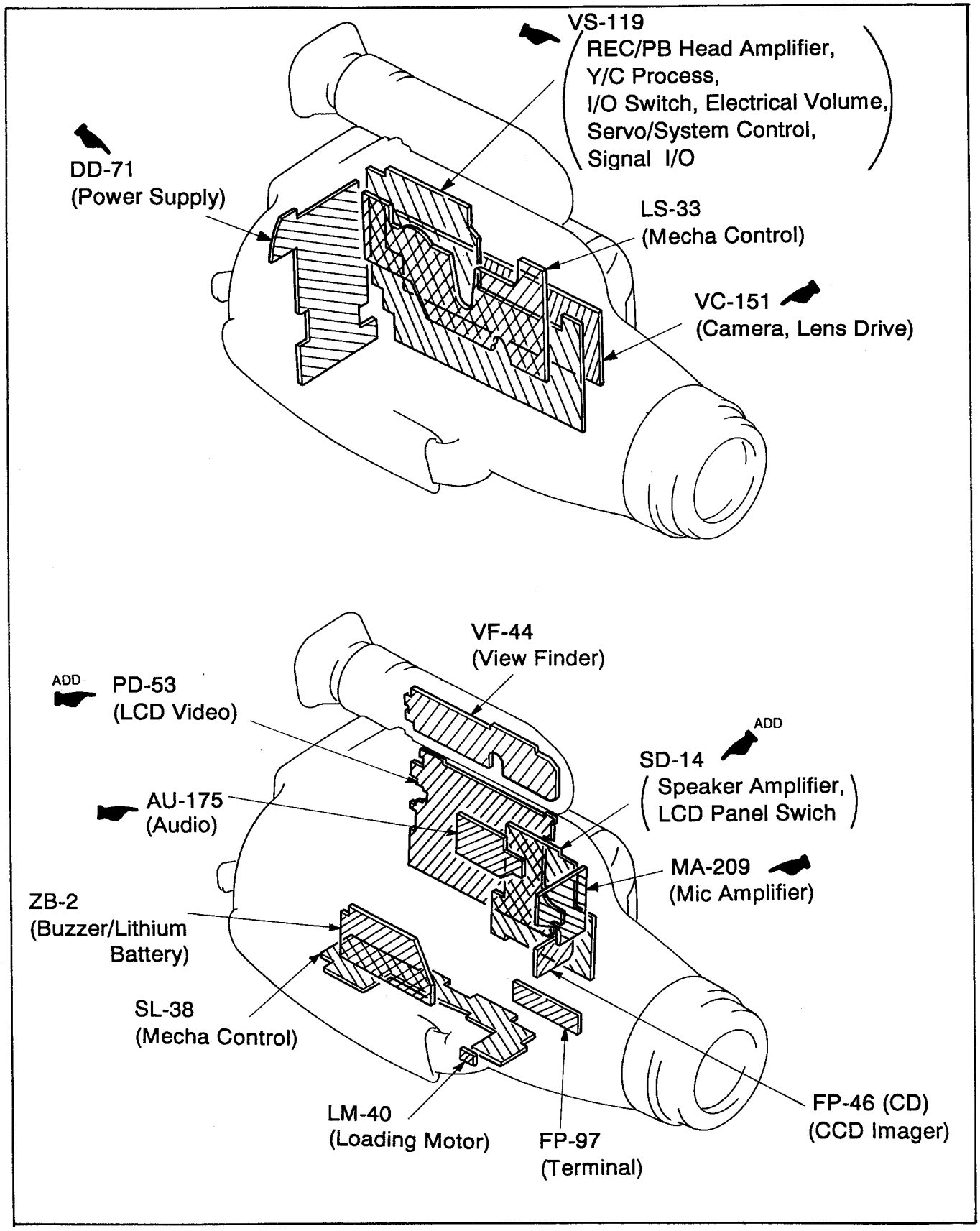
2-5-3. REMOVAL OF PANEL BLOCK



2-5-4. REMOVAL OF LCD MODULE AND PD-53 BOARD



2-13. CIRCUIT BOARDS LOCATION



4-2 PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this , the necessary note is printed in each block.)

- **For printed wiring boards.**
- ▒▒▒ : Pattern from the side which enables seeing.
  (The other layers'patterns are not indicated.)
- Circled numbers refer to waveforms.
- (B) or (F), etc. of capacitors indicate the temperature characteristics.
- ○: Through hole .

* Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

- **For schematic diagrams.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minuts side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
  Chip resistor are 1/16W unless otherwise noted.
  kΩ : 1000Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.
- △ : internal component.
- : adjustment for repeair.*
- ——— : B+ Line.*
- - - - : B- Line.*
- : IN/OUT direction of (+, –) B LINE.*
- Circled numbers refer to waveforms.*

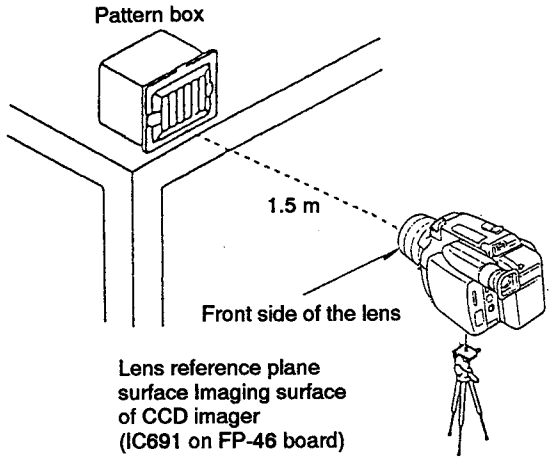
Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safty. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

*: indicated by the color red.

- **Measuring conditions voltage value and waveform. (CAMERA block)**
- The object is color bar chart of pattern box.
- Voltages are dc between ground and measurement points.* Readings are taken with a digital multimeter (DC 10MΩ).*
- Voltage variations may be noted due to normal production tolerances.*

1. Connection



2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

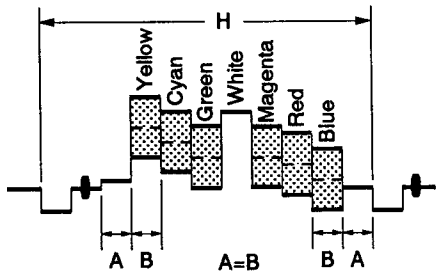


Fig. a (Video output terminal output waveform)

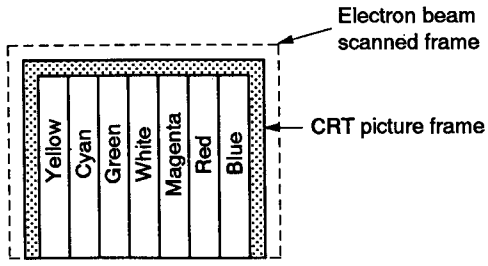


Fig. b (Picture on monitor TV)

(VIDEO, SERVO/SYSTEM CONTROL, AUDIO, LCD CONTROL block)

- Voltages are dc between ground and measurement points.*
- Readings are taken with a color-bar signal input.*
- Readings are taken with a digital multimeter (DC10MΩ).*
- Voltage variations may be noted due to normal production tolerances.*

SECTION 5
REPAIR PARTS LIST

5-1. EXPLODED VIEWS

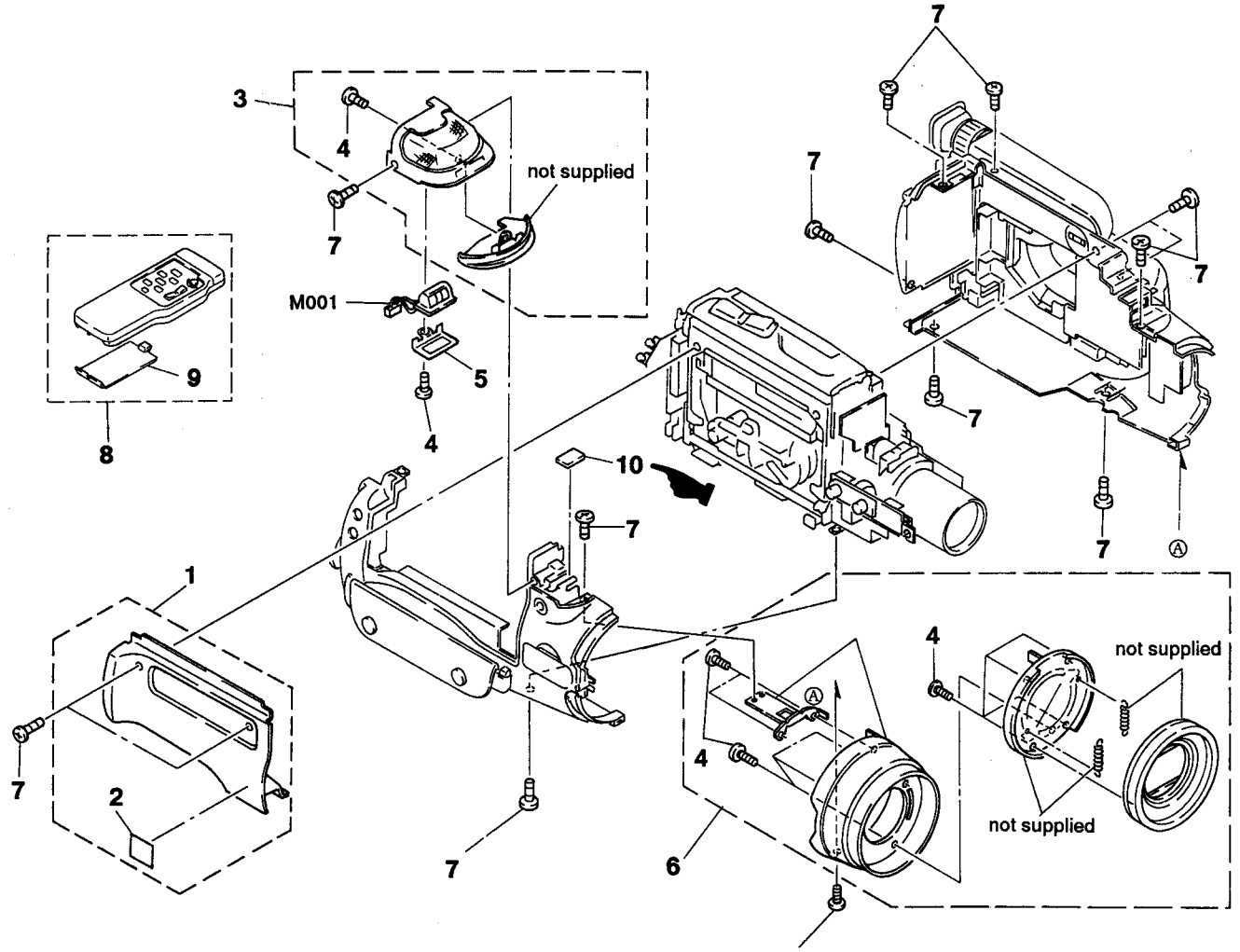
NOTE:
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Hardware (# mark) list is given in the last of this parts list.
- Canadian model is abbreviated as CND.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

Page. 5–1

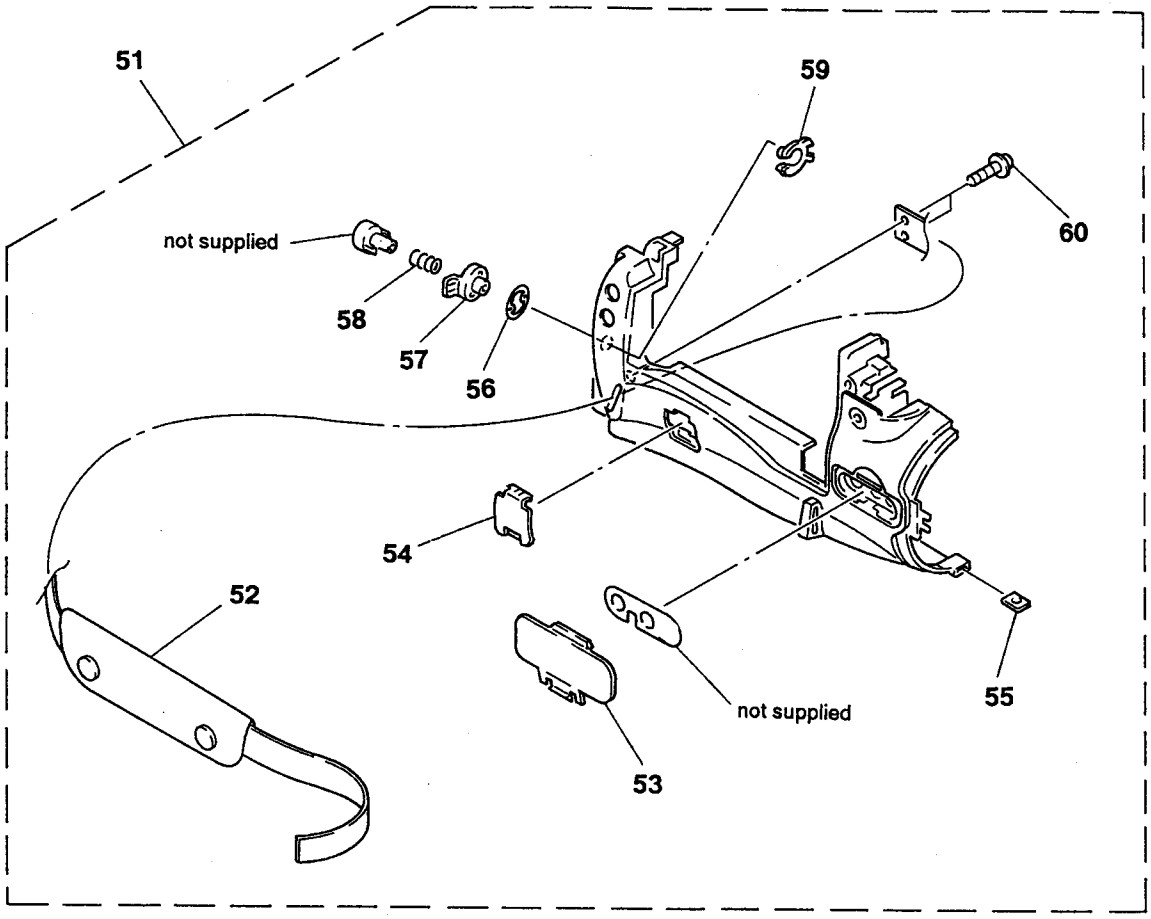
5-1-1. FRONT CASE BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Remark
1	X-3944-277-1	LID ASSY, CASSETTE	
2	3-703-710-41	STICKER, SONY SYMBOL (12)	
3	X-3943-847-1	HOLDER (M) ASSY, MICROPHONE	
4	3-948-339-01	SCREW (BTP) (2X5), HEAD	
* 5	3-958-672-01	PLATE, FIXED (W), MICROPHONE	
6	A-7082-608-A	CASE (L) BLOCK ASSY, FRONT	
7	3-719-381-01	SCREW (M2X4)	
8	1-467-574-21	REMOTE COMMANDER (RMT-708)	
9	3-958-131-01	LID, BATTERY CASE (for RMT-708)	
10	3-961-121-01	CUSHION, MICROPHONE	
M001	1-542-162-11	MICROPHONE UNIT	

Page. 5–2

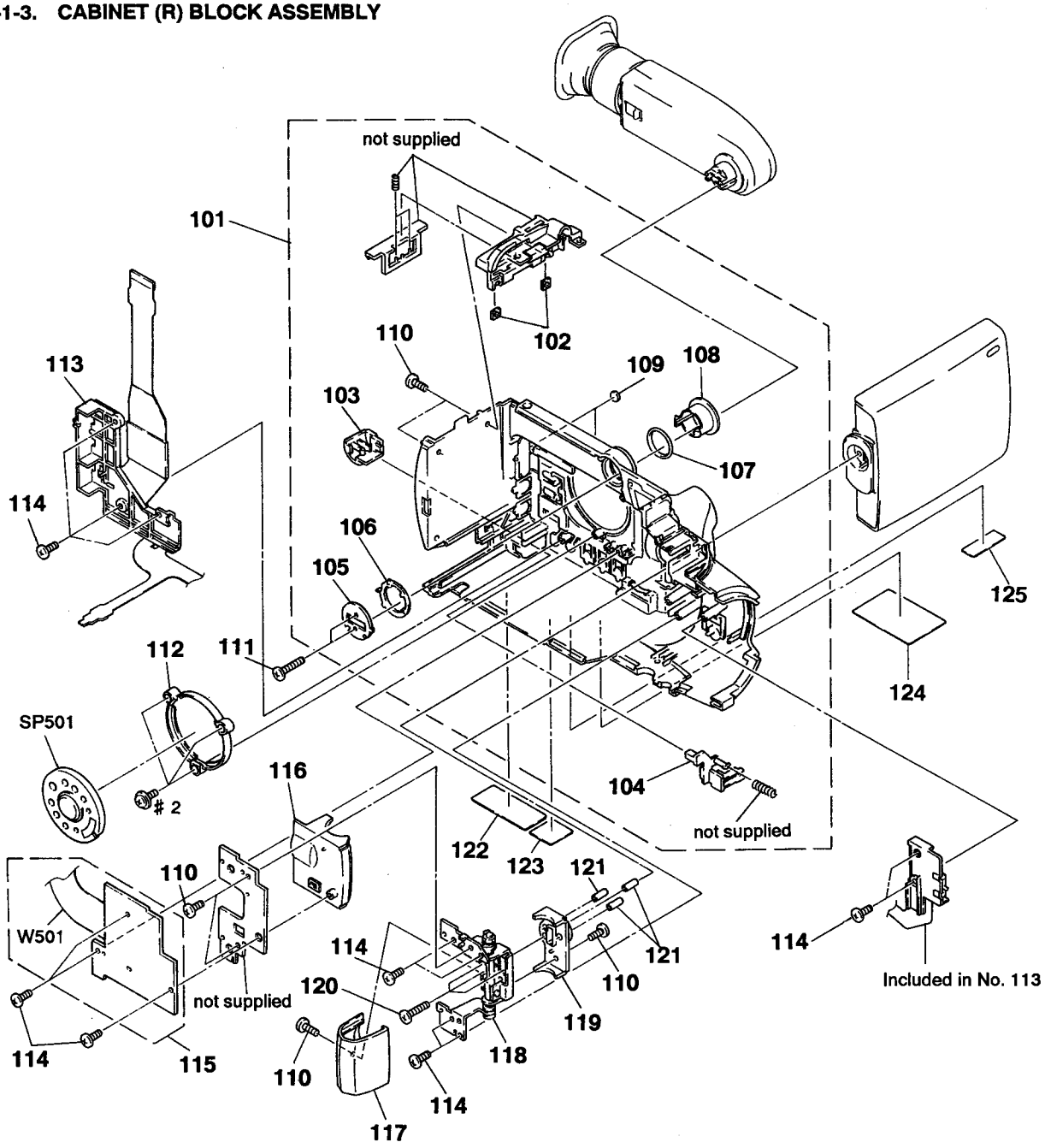
5-1-2. CABINET (L) BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Remark
51	A-7082-581-A	CABINET (L) BLOCK ASSY	
52	3-736-807-01	BELT, GRIP	
53	3-958-335-01	COVER, JACK	
54	3-958-334-01	LID, BATTERY CASE, LITHIUM	
55	3-718-233-01	NUT, PLATE	
56	3-736-364-01	SPRING	
57	3-942-985-01	KNOB, STAND-BY	
58	3-578-221-00	SPRING, COMPRESSION	
59	3-942-953-01	HOLDER, STAND-BY KNOB	
60	3-669-480-21	+ PTPWH 2	

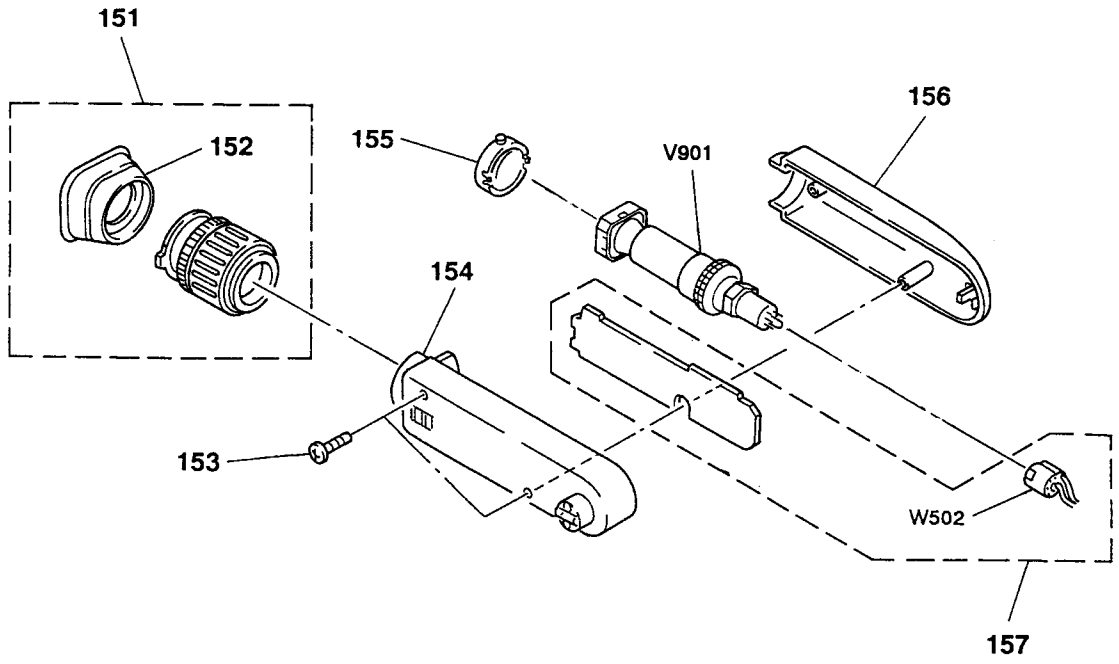
Page. 5-3

5-1-3. CABINET (R) BLOCK ASSEMBLY



Ref. No.	Part No.	Description	Remark
101	X-3944-272-1	CABINET (R) ASSY	
102	3-718-233-01	NUT, PLATE	
103	3-959-975-01	KNOB, BATT	
104	3-959-976-01	LOCK, BATT	
* 105	3-958-297-01	PLATE, LOCK, TILT	
* 106	3-958-296-01	SPRING, PLATE, TILT	
107	3-747-112-01	RING, TILT	
108	3-747-109-01	SLEEVE, EVF	
109	3-959-978-01	CUSHION, PANEL	
110	3-719-381-01	SCREW (M2X4)	
111	3-740-546-51	SCREW (M2X9)	
112	3-959-995-01	CUSHION, SPEAKER	
113	1-467-835-21	SWITCH BLOCK, CONTROL (CK)	
114	3-948-339-01	SCREW (BTP) (2X5), HEAD	
* 115	A-7072-055-A	SD-14 BOARD, COMPLETE	
* 116	3-959-999-01	BLIND, HINGE	
117	3-959-998-01	COVER, HINGE	
118	X-3944-273-1	HINGE ASSY	
* 119	3-959-997-01	BASE, TILT	
120	3-740-546-81	SCREW (M2X11)	
* 121	3-657-841-41	SPACER (2X8)	
* 122	3-959-967-01	LABEL, MODEL NUMBER (U) (US, CND)	
* 122	3-960-889-01	LABEL, MODEL NUMBER (E)	
123	3-704-256-01	LABEL, CAUTION (US)	
124	3-957-897-01	LABEL, FAROUDJA RECYCLE FCC (US)	
125	3-954-355-01	LABEL (C), NI-CD RECYCLE (CND)	
SP501	1-504-666-11	SPEAKER (4CM)	
W501	1-653-930-11	FP-148 FLEXIBLE BOARD	

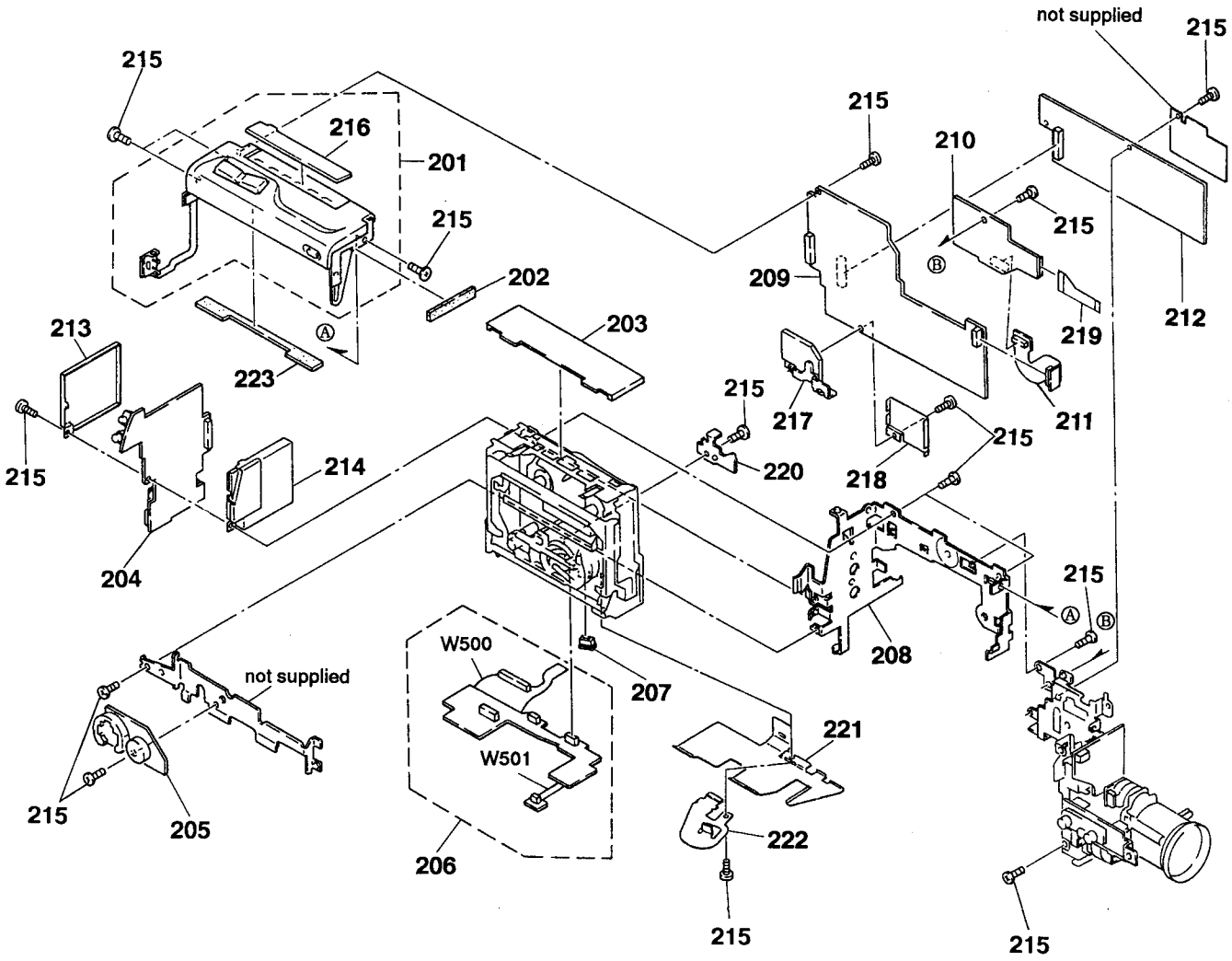
5-1-4. EVF BLOCK ASSEMBLY



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remark
151	A-7081-897-C	HOLDER BLOCK ASSY, FINDER	
152	3-946-212-01	EYE CUP	
153	3-713-790-31	SCREW (M2X8), TAPPING, P3	
154	X-3943-848-1	CABINET (L) ASSY, EVF	
155	A-7081-905-E	LENS ASSY, VF	
156	X-3943-844-1	CABINET (R) ASSY, EVF	
* 157	A-7063-947-A	VF-44 BOARD, COMPLETE	
⚠V901	1-452-566-11	CRT ASSY (M01KKX07WB10)	
⚠W502	1-526-978-51	SOCKET ASSY, CRT	

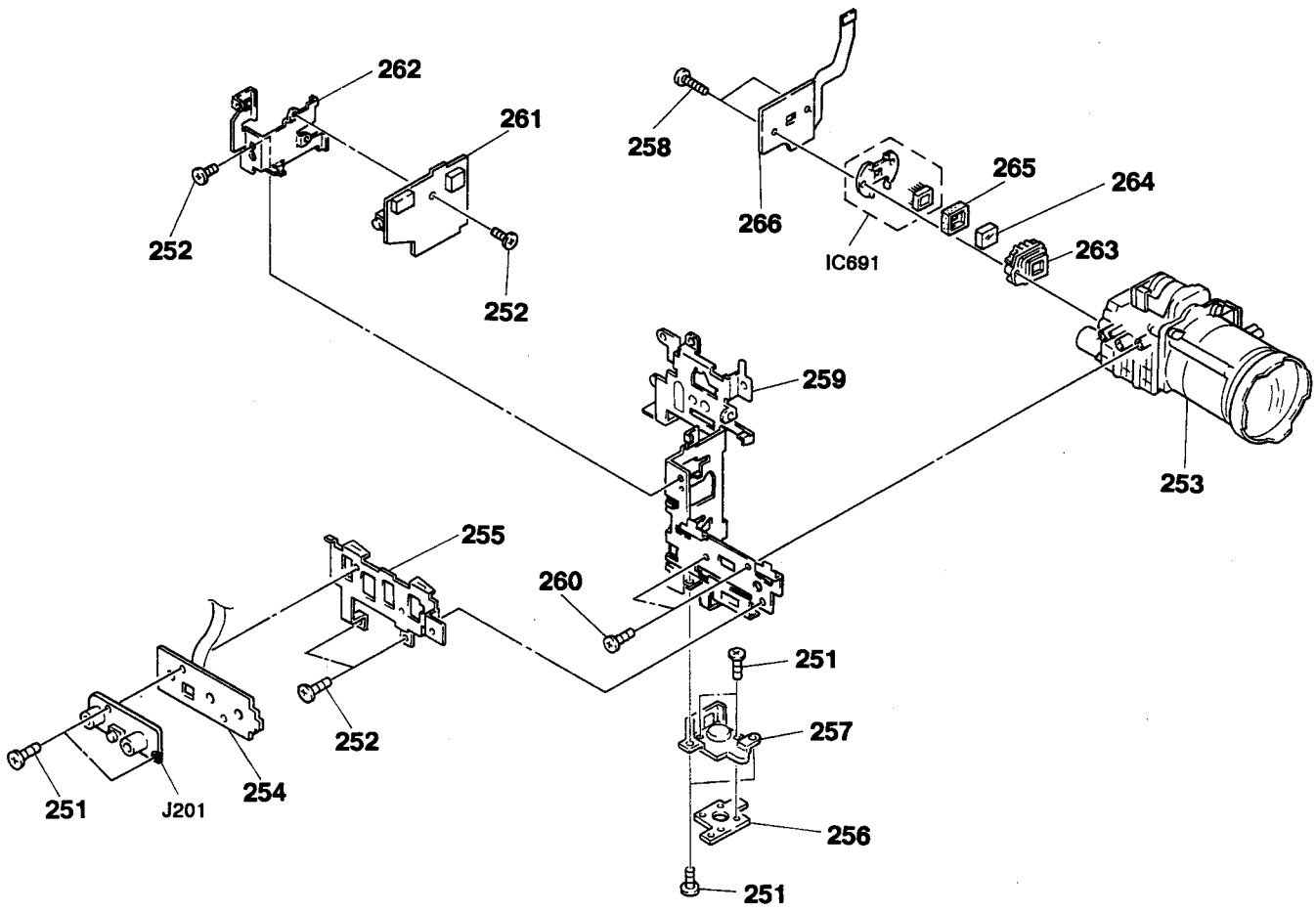
5-1-5. MAIN BOARDS ASSEMBLY



Ref. No.	Part No.	Description	Remark
201	1-467-649-31	SWITCH BLOCK, CONTROL (FK)	
202	3-959-113-01	CUSHION, FK FRAME	
203	3-958-341-01	COVER, LS	
* 204	A-7066-154-A	DD-71 BOARD, COMPLETE	
* 205	A-7072-002-A	ZB-2 BOARD, COMPLETE	
* 206	A-7072-000-A	SL-38 BOARD, COMPLETE	
207	1-691-471-11	CONNECTOR, TRANSLATION 11P	
* 208	3-958-345-01	FRAME (U)	
* 209	A-7066-156-A	VS-119 BOARD, COMPLETE (US, CND)	
* 209	A-7066-210-A	VS-119 BOARD, COMPLETE (E)	
* 210	A-7066-153-A	AU-175 BOARD, COMPLETE	
211	1-651-935-11	FP-95 FLEXIBLE BOARD	
* 212	A-7066-155-A	VC-151 BOARD, COMPLETE	
* 213	3-958-925-01	CASE (MAIN), SHIELD, DD	

Ref. No.	Part No.	Description	Remark
* 214	X-3944-169-1	SHIELD (LID) ASSY, DD	
215	3-713-786-21	SCREW (M2X3)	
216	3-958-720-01	LID	
* 217	X-3943-976-1	SHIELD (MAIN) ASSY, RP	
* 218	3-958-924-01	CASE (LID)), SHIELD, RP	
219	1-651-936-11	FP-96 FLEXIBLE BOARD	
* 220	3-958-667-01	FRAME (B)	
* 221	3-958-928-01	PLATE, SHIELD, RP	
222	1-651-891-11	FP-52 FLEXIBLE BOARD	
223	3-958-719-01	CUSHION, FK	
W500	1-651-889-11	FP-48 FLEXIBLE BOARD	
W501	1-642-186-11	FP-437 FLEXIBLE BOARD	

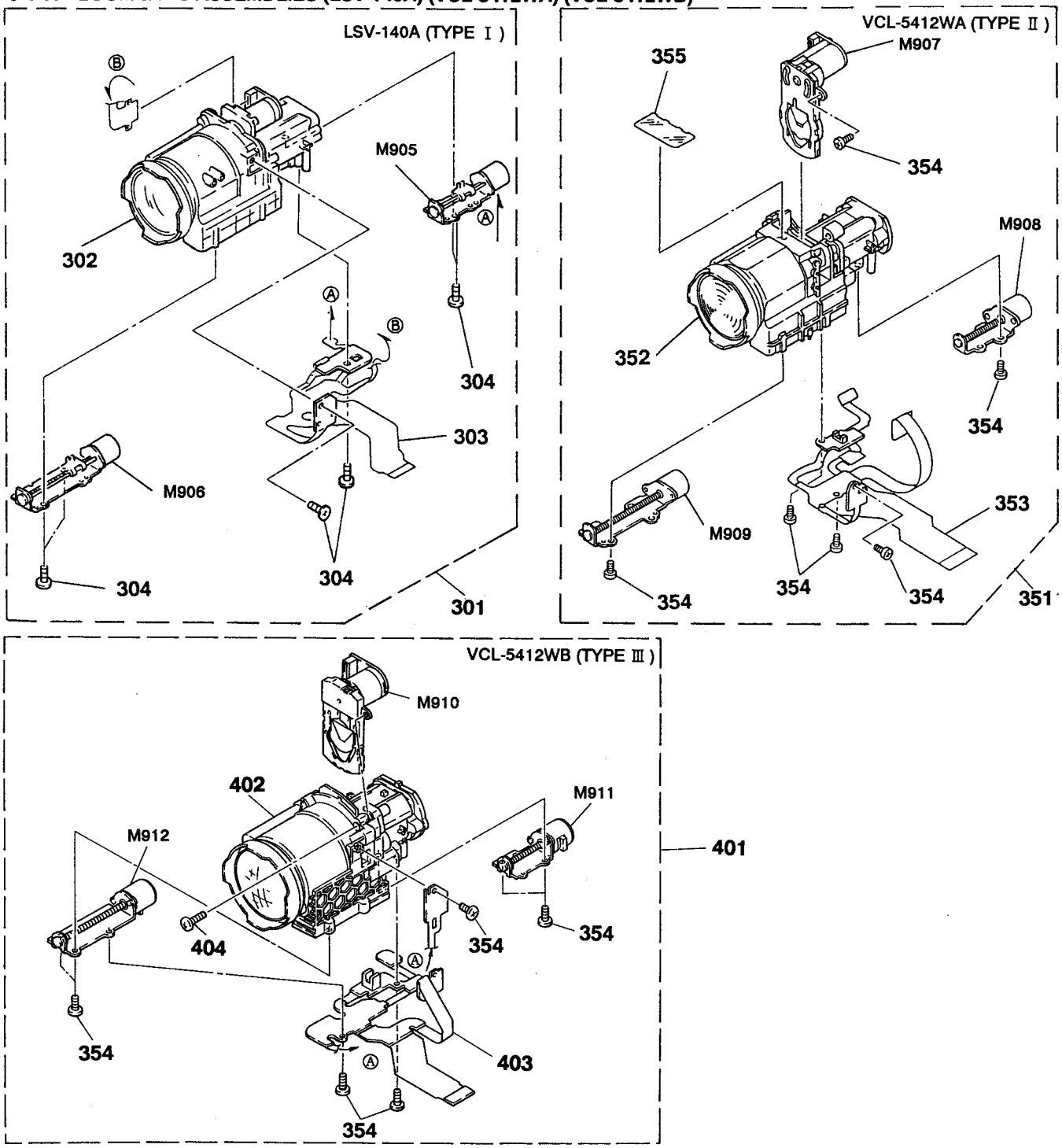
5-1-6. CCD BLOCK ASSEMBLY



Be sure to read "Note on the CCD Imager replacement" on page 4-6(CCD-FX403/FX435/FX530/FX630)when changing the CCD imager.

Ref. No.	Part No.	Description	Remark
251	3-719-381-01	SCREW (M2X4)	
252	3-713-786-21	SCREW (M2X3)	
253	1-547-716-11	LENS, ZOOM (VCL-5412WA)(TYPE II)	
253	1-547-739-11	LENS, ZOOM (VCL-5412WB)(TYPE III)	
253	8-848-704-01	DEVICE, LENS LSV-140A (TYPE I)	
254	1-651-904-11	FP-97 FLEXIBLE BOARD	
* 255	3-958-333-01	FRAME (PJ)	
256	3-958-286-01	SHEET METAL, TRIPOD	
257	3-958-310-01	HOLDER, TRIPOD	
258	3-947-268-01	SCREW (P TIGHT)(2), TAPPING, +B	
* 259	X-3944-147-1	FRAME (L) ASSY	
260	3-948-339-01	SCREW (BTP)(2X5), HEAD	
* 261	A-7066-152-A	MA-209 BOARD, COMPLETE	
* 262	3-958-328-01	FRAME (MA)	
263	3-946-856-01	ADAPTOR (H), CCD FITTING	
264	1-547-558-21	FILTER BLOCK, OPTICAL	
265	3-946-857-01	RUBBER (S), SEAL	
* 266	A-7072-003-A	FP-46 (CD) BOARD, COMPLETE	
IC691	A-7030-368-A	CCD BLOCK ASSY (054 SERVICE)(CCD IMAGER)	
J201	1-537-726-11	TERMINAL BOARD	

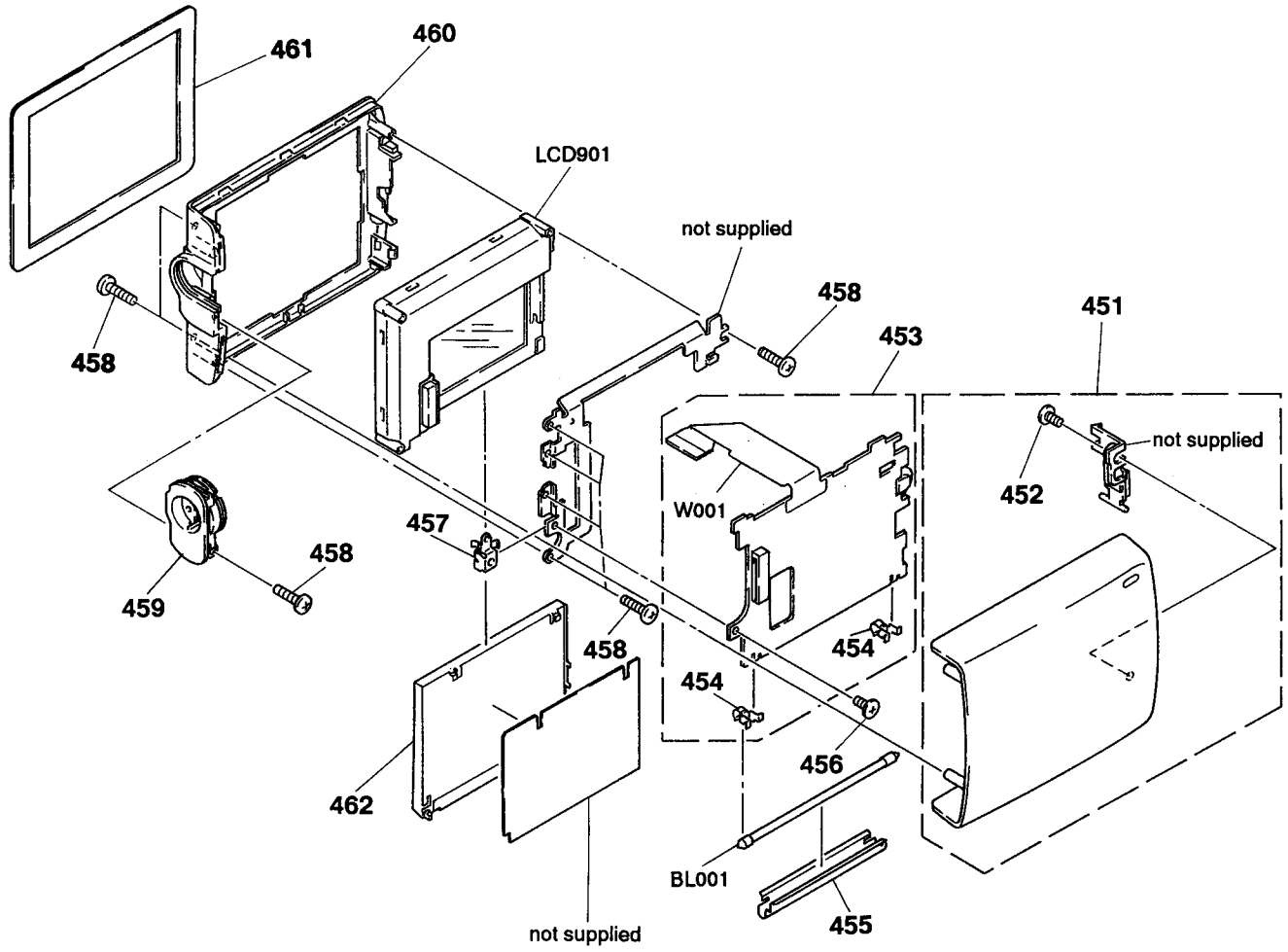
5-1-7. ZOOM LENS ASSEMBLIES (LSV-140A) (VCL-5412WA) (VCL-5412WB)



Ref.No.	Part No.	Description	Remark
301	8-848-704-01	DEVICE, LENS LSV-140A (TYPE I)	
302	A-4910-598-A	DEVICE ASSY, LSV-140A (RP)	
303	A-4915-338-A	FLEXIBLE MOUNT	
304	3-713-791-41	SCREW (M1.7X5), TAPPING, P2	
M905	1-698-364-01	MOTOR ASSY, FOCUS	
M906	1-698-363-01	MOTOR ASSY, ZOOM	
351	1-547-716-11	LENS, ZOOM (VCL-5412WA)(TYPE II)	
352	3-708-891-01	TUBE, MIRROR ASSY	
353	3-708-890-01	FLEXIBLE, MAIN	
354	3-708-302-01	SCREW (BT3 P1.7X4C)	
355	3-708-886-01	COVER, IG	
M907	3-708-888-01	METER, IG (IRIS)	
M908	3-708-889-01	MOTOR ASSY, FOCUS	
M909	3-708-887-01	MOTOR ASSY, ZOOM	
401	1-547-739-11	LENS, ZOOM (VCL-5412WB)(TYPE III)	
402	3-708-900-01	TUBE, MIRROR ASSY	
403	3-708-899-01	PC BOARD ASSY, FLEXIBLE	
404	3-708-617-01	SCREW (BT3 P1.7X7C)	
M910	3-708-898-01	IRIS ASSY	
M911	3-708-897-01	MOTOR ASSY, FOCUS	
M912	3-708-896-01	MOTOR ASSY, ZOOM	

Add

5-1-12. PANEL BLOCK ASSEMBLY



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

This cut does not have in the CCD-FX430 series, but it is newly added in the CCD-FX730V.

Ref. No.	Part No.	Description	Remark
451	X-3944-276-1	CABINET (REAR) ASSY, P	
452	3-948-339-01	SCREW (BTP) (2X5), HEAD	
* 453	A-7066-157-A	PD-53 BOARD, COMPLETE	
* 454	3-960-000-01	TERMINAL, FL	
* 455	3-958-726-02	REFLECTOR	
456	3-713-786-21	SCREW (M2X3)	
* 457	3-959-966-01	SPRING, P GROUND PLATE	
458	3-713-790-31	SCREW (M2X8), TAPPING, P3	
* 459	X-3944-274-1	TILT ASSY	
460	X-3944-275-1	CABINET (FRONT) ASSY, P	
461	3-959-968-01	PLATE, ORNAMENTAL	
462	1-467-479-21	PLATE, LIGHT GUIDE BLOCK	
⚠BL001	1-517-300-11	TUBE, FLUORESCENT (BACK LIGHT)	
LCD901	1-810-328-21	DISPLAY MODULE, LIQUID CRYSTAL	
W001	1-653-931-11	FP-150 FLEXIBLE BOARD	

5-2. ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Hardware (# mark) list is given in the last of this parts list.

- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA..., uPB...: μPB..., uPC...: μPC..., uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH

Ref.No.	Part No.	Description			Remark
*	A-7066-154-A	DD-71 BOARD, COMPLETE ********** (Ref. No. 9,000 Series)			
		< CAPACITOR >			
C901	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C902	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C903	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C904	1-163-121-00	CERAMIC CHIP	150PF	5%	50V
C906	1-164-245-11	CERAMIC CHIP	0.015uF	10%	25V
C907	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C908	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C909	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C910	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C911	1-162-963-11	CERAMIC CHIP	680PF	10%	50V
C912	1-128-530-11	ELECT CHIP	33uF	20%	10V
C913	1-128-004-11	ELECT CHIP	10uF	20%	16V
C914	1-128-004-11	ELECT CHIP	10uF	20%	16V
C915	1-165-178-11	CERAMIC CHIP	6.8uF		16V
C916	1-128-004-11	ELECT CHIP	10uF	20%	16V
C917	1-165-178-11	CERAMIC CHIP	6.8uF		16V
C918	1-165-178-11	CERAMIC CHIP	6.8uF		16V
C920	1-165-178-11	CERAMIC CHIP	6.8uF		16V
C921	1-165-178-11	CERAMIC CHIP	6.8uF		16V
C923	1-165-178-11	CERAMIC CHIP	6.8uF		16V
C924	1-165-178-11	CERAMIC CHIP	6.8uF		16V
C925	1-164-506-11	CERAMIC CHIP	4.7uF		16V
C926	1-164-337-11	CERAMIC CHIP	2.2uF		16V
C927	1-165-178-11	CERAMIC CHIP	6.8uF		16V
C928	1-165-178-11	CERAMIC CHIP	6.8uF		16V
C929	1-135-216-11	TANTALUM CHIP	10uF	20%	10V
C930	1-107-418-11	ELECT CHIP	10uF	20%	35V
C931	1-128-004-11	ELECT CHIP	10uF	20%	16V
C932	1-128-004-11	ELECT CHIP	10uF	20%	16V
C934	1-128-004-11	ELECT CHIP	10uF	20%	16V
C935	1-128-004-11	ELECT CHIP	10uF	20%	16V
C936	1-128-004-11	ELECT CHIP	10uF	20%	16V
C937	1-128-004-11	ELECT CHIP	10uF	20%	16V
C938	1-128-004-11	ELECT CHIP	10uF	20%	16V
C939	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C940	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V
C941	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C942	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V
C943	1-163-019-00	CERAMIC CHIP	0.0068uF	10%	50V
C944	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C945	1-128-530-11	ELECT CHIP	33uF	20%	10V
C950	1-128-004-11	ELECT CHIP	10uF	20%	16V
		< CONNECTOR >			
CN901	1-695-324-11	CONNECTOR, BOARD TO BOARD 42P			
CN902	1-691-490-21	CONNECTOR, FFC/FPC 11P			
		< DIODE >			
D900	8-719-045-87	DIODE MA4Z082WA-TX			
D901	8-719-027-77	DIODE MA796			
D909	8-719-404-49	DIODE MA111			
D910	8-719-404-49	DIODE MA111			
		< FUSE >			
⚠F251	1-576-213-11	FUSE, CHIP (SOC 1.6) 125V, 1.6A			
⚠F252	1-576-213-11	FUSE, CHIP (SOC 1.6) 125V, 1.6A			
⚠F253	1-576-213-11	FUSE, CHIP (SOC 1.6) 125V, 1.6A			
⚠F254	1-576-213-11	FUSE, CHIP (SOC 1.6) 125V, 1.6A			
		< IC >			
IC901	8-759-249-14	IC MB3799-02PFV-GBND-ER (DC/DC CONVERTER, PWM DRIVE)			
		< JACK >			
J901	1-537-281-41	TERMINAL BOARD (BATTERY)			
J902	1-565-276-21	JACK, ULTRA SMALL 1P (LANC)			
J903	1-568-027-11	JACK, SMALL TYPE 1P (EARPHONE)			
		< COIL >			
L901	1-424-653-11	COIL, CHOKE 10uH			
L902	1-424-653-11	COIL, CHOKE 10uH			
L903	1-424-653-11	COIL, CHOKE 10uH			
L904	1-409-556-11	COIL, CHOKE 47uH			
L905	1-424-674-11	COIL, CHOKE 22uH			
L906	1-409-556-11	COIL, CHOKE 47uH			
L907	1-424-674-11	COIL, CHOKE 22uH			
L908	1-424-674-11	COIL, CHOKE 22uH			

SECTION 7
ADJUSTMENTS

7-1. CAMERA SECTION ADJUSTMENTS

1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

1-1-2. Preparations
Page. 7–2

Note 1: For further details of how to remove the cabinet and each board, refer to "2. Disassembly".

Note 2: When adjusting only, the lens block and VC-151 board need not be taken apart.

1) Connect the equipments for adjusting as shown in Fig. 7-1-3.
2) If remove the cabinet (R) (Power switch, camera function switch, LCD unit and electronic view-finder), set to the camera power supply ON mode (Note 1), and disconnect the following connectors.
   1. CN503 of VS-119 board
   2. CN206 of VS-119 board
   3. CN101 of ZB-2 board
   4. CN902 of DD-71 board

   Be sure to exit this mode after completing the adjustment. (Note 2)
3) Turning OFF the Auto Focus Using the Adjusting Remote Commander
   1. Set data: 01 to page: 6, address: 25.
      (The auto focus will turn OFF. The focus can be adjusted using the focus button on the adjusting remote commander. But the HOLD switch must be set to OFF.)
   2. After completing the adjustment/operation check, set data: 00 to page: 6, address: 25.

Note 1: Setting the Forced Camera Power Supply ON Mode
1) Set data: 01 to page: 1, address: 00.
2) Set data: 21 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.

By carrying out the above, the camera can be operated even if the cabinet (R) has been removed. Be sure to exit the forced camera power ON mode after completing the adjustment.

Note 2: Exiting the Forced Camera Power Supply ON Mode
1) Set data: 01 to page: 1, address: 00.
2) Set data: 00 to page: D, address: 03, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 1, address: 00.

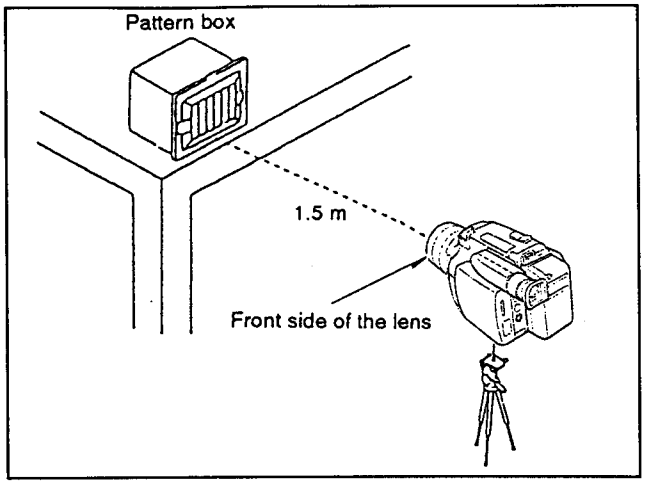


Fig. 7-1-2.

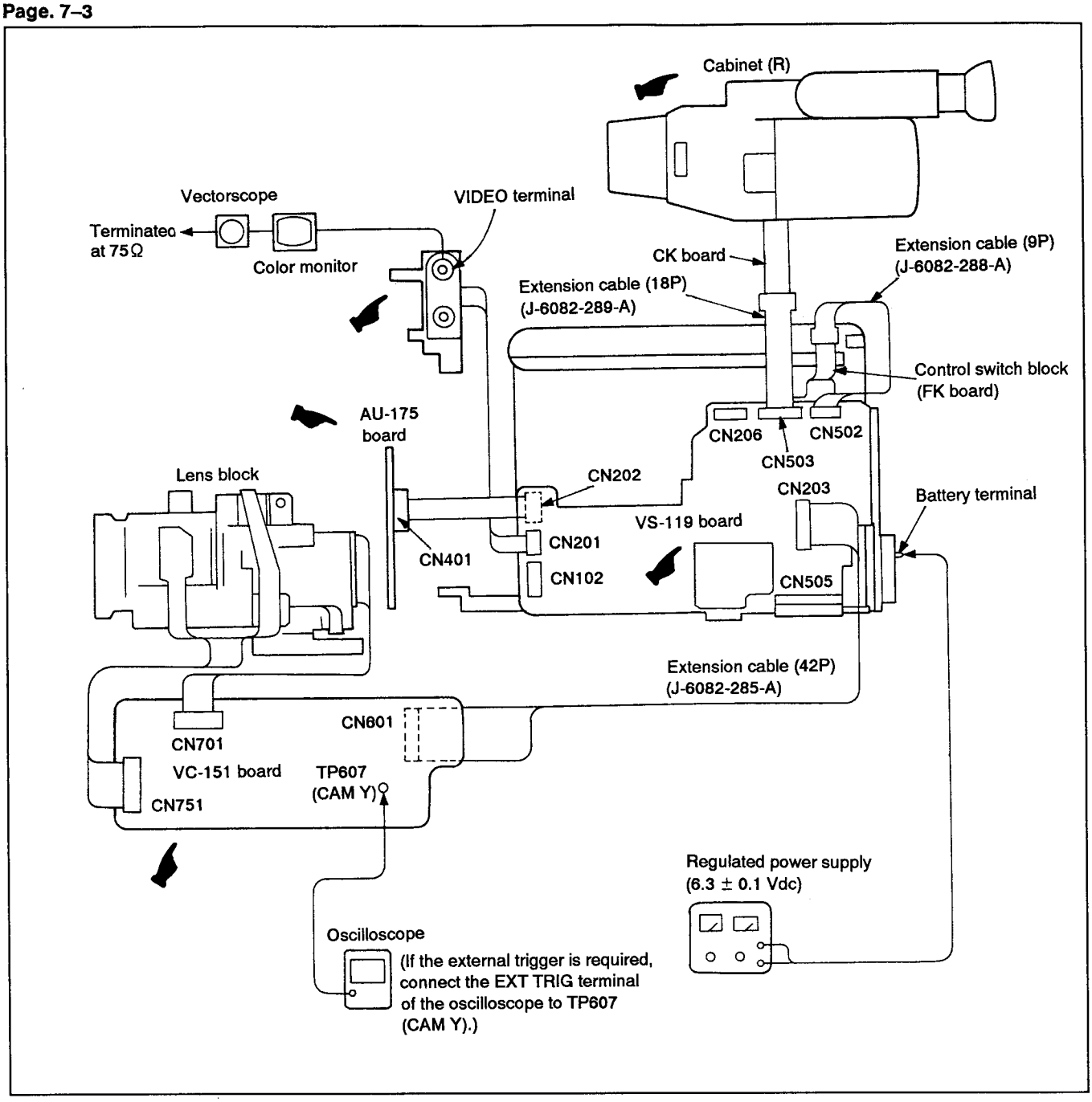

Cabinet (R)
Vectorscope
Terminated at 75Ω
Color monitor
VIDEO terminal
CK board
Extension cable (9P)
(J-6082-288-A)
Extension cable (18P)
(J-6082-289-A)
Control switch block
(FK board)
AU-175
board
CN206
CN502
CN503
Lens block
CN202
CN203
Battery terminal
VS-119 board
CN401
CN201
CN102
CN505
Extension cable (42P)
(J-6082-285-A)
CN601
CN701
VC-151 board
TP607
(CAM Y)
CN751
Regulated power supply
(6.3 ± 0.1 Vdc)
Oscilloscope
(If the external trigger is required, connect the EXT TRIG terminal of the oscilloscope to TP607 (CAM Y).)

Fig. 7-1-3.

7-3. VIDEO SECTION ADJUSTMENTS

When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 7–16.
(AU-175 board : Refer to the AU-157 board in the CCD-FX430/FX435/FX530/FX630 Service Manual page 7–68.)

3-1. PREPARATIONS BEFORE ADJUSTMENT

3-1-2. Adjusting Precautions

Page. 7–31

1) The adjustment for this unit is performed using the VIDEO input (VIDEO terminal input) or the camera input. The camera input can be used for video adjustments only. Use the VIDEO input for the other adjustments.
   When using the VIDEO input, set the power supply switch to "VTR" or set the "forcible VTR power supply ON mode" using the adjusting remote commander. (Note 1).
   When using the camera input, set the power supply switch to "CAMERA" or set the "Forcible camera+VTR power supply ON mode" using the adjusting remote commander (Note 2).
   After completing adjustments, be sure to exit the "forcible VTR power supply ON mode" or "forcible camera+VTR power supply ON mode" (Note 3).
2) The MA-209 board is not used for video adjustments. Disconnect the following connectors in these adjustments.
   1. CN402 of the AU-175 board
3) The cabinet (R) (Power supply switch, camera function switch, speaker amp.), LCD unit and the view finder need not be connected if the "forcible VTR power supply ON mode" or "forcible camera+VTR power supply ON mode" is set. In this case, disconnect the following connectors.
   1. CN503 of the VS-119 board (18P, 0.8 mm)
   2. CN101 of the ZB-2 board (4P, 0.8 mm)
   3. CN206 of the VS-119 board (14P, 0.5 mm)
   4. CN902 of the DD-71 board (11P, 0.8 mm)

   However, as disconnecting CN503 of the VS-119 board and CN101 of the ZB-2 board means disconnecting the 3V lithium power supply, data set by the user such as the date, time, and menu will be lost. After completing the adjustments, set these data again, and be sure to exit the "forcible VTR power supply ON mode" or "forcible camera+VTR power supply ON mode". (Note 3)
   When connecting the cabinet (R) using the extension cord, use the following type.
   1. J-6080-289-A (18P, 0.8 mm)

Page. 7–32

4) The lens block and VC-151 board are not used for video adjustments. Disconnect the following connectors in these adjustments.
   1. CN203 of the VS-119 board (42P, 0.8 mm)

   Connect the following when removing the VC-151 board.
   1. Connect Pin ㉒ (REG H) and Pin ⑦ (D3.6V) of CN203 of the VS-119 board with a jumper wire.

   When connecting the VC-151 board using the extension cord, use the following type.
   1. J-6080-285-A (42P, 0.8 mm)
5) The audio board (AU-175 board) is required only for audio adjustments. When not using it, disconnect the following connector.
   1. CN202 of the VS-119 board (24P, 0.8 mm)
6) When opening the VS-119 board, disconnect the following connectors.
   1. CN502 of the VS-119 board (9P, 0.8 mm)

   The VTR function keys will not work. Use the remote commander to perform operations other than EJECT.
   When connecting the FK board and CN502 of VS-119 board using the extension cord, use the following type.
   1. J-6080-288-A (9P, 0.8 mm)

Note 1: Setting the "forcible VTR power supply ON mode (VIDEO input mode)"
1) Set data: 01 to page: 1, address: 00.
   (Releasing the page D protect)
2) Set data: 02 to page: D, address: 03 and press the PAUSE button of the adjusting remote commander.
   (Setting the forcible VTR power supply ON mode)

By performing the above, the VTR can be operated with the cabinet (R) removed. After completing adjustments, be sure to exit the "forcible power supply ON mode".

Note 2: Setting the "forcible camera+VTR power supply ON mode (camera input mode)"
1) Set data: 01 to page: 1, address: 00.
   (Releasing the page D protect)
2) Set data: 03 to page: D, address: 03 and press the PAUSE button of the adjusting remote commander.
   (Setting the forcible camera+VTR power supply ON mode)

By performing the above, the VTR can be operated with the cabinet (R) removed. After completing adjustments, be sure to exit the "forcible power supply ON mode".

Note 3: Exiting the "forcible power supply ON mode"
1) Set data: 01 to page: 1, address: 00.
   (Releasing the page D protect)
2) Set data: 00 to page: D, address: 03 and press the PAUSE button of the adjusting remote commander.
   (Setting the forcible power supply ON mode)
3) Set data: 00 to page: 1, address: 00.
   (Setting the page D protect)

3-1-8. Service Mode

12. Page D address list

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Note 1: The adjustment data initial value is the data input before performing video section adjustments (Page D) if the Page D data has been erased due to some reason.

Note 2: The data written in the adjustment data memo column are fixed.
After adjusting, check that these data have not been rewritten by mistake.

Note 3: In some case, data have been input to the page D address 91 to AF, BC to D3 and F0 to FF. This has no relation to the adjustment.

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
00		Not used		
01		Not used		
02	TEST MODE (MECHA-CON)	Mecha-con (IC505) test mode	00	00
03	TEST MODE (MODE-CON)	Mode-con (IC503) test mode	00	00
04	SW POSITION (L)	Switching position adjustment (Low)	80	
05	SW POSITION (H)	Switching position adjustment (High)	0B	
06	BATTERY END	Battery end adjustment	66	
07	BATTERY PRE-END	Battery end adjustment	7F	
08	BATTERY LOW	Battery end adjustment	84	
09	BATTERY MIDDLE	Battery end adjustment	8A	
0A	BATTERY HIGH	Battery end adjustment	8E	
0B			00	00
0C		Not used		
0D		Not used		
0E		Not used		
0F		Not used		
10		Design data	00	00
11		Design data	00	00
12		Design data	00	00
13		Design data	00	00
14		Design data	95	95
15		Design data	77	77
16		Design data	01	01
17	VARIATION	No mark : US/Canadian model ( ) : E model	12 (13)	12 (13)
18	FEATURE		04	04
19	FEATURE		40	40
1A	FEATURE		58	58
1B	FEATURE		2C	2C
1C	FEATURE		00	00
1D	FEATURE		00	00
1E		Not used		
1F		Not used		

Table 7-3-2. (1)

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
20		Not used		
21		Not used		
22		Not used		
23			00	00
24		Design data	00	00
25		Design data	00	00
26		Design data	14	14
27		Design data	14	14
28		Design data	64	64
29		Design data	64	64
2A		Design data	6E	6E
2B		Design data	6E	6E
2C		Design data	64	64
2D		Design data	64	64
2E		Design data	6E	6E
2F		Design data	6E	6E
30		Design data	DC	DC
31		Design data	DC	DC
32	EVR REC C (SP L ME)	SP Normal ME REC C adjustment [IC951 ⑩]	DC	
33	EVR REC C (SP L MP)	SP Normal MP REC C adjustment [IC951 ⑩]	DC	
34			DC	DC
35			DC	DC
36	EVR REC C (LP L ME)	LP Normal ME REC C adjustment [IC951 ⑩]	DC	
37	EVR REC C (LP L MP)	LP Normal MP REC C adjustment [IC951 ⑩]	DC	
38	EVR REC LOW 1 (ME)	1ch ME REC L adjustment [IC951 ㊲]	E4	
39	EVR REC LOW 1 (MP)	1ch MP REC L adjustment [IC951 ㊲]	EB	
3A	EVR REC LOW 2 (ME)	2ch ME REC L adjustment [IC951 ㊲]	E4	
3B	EVR REC LOW 2 (MP)	2ch MP REC L adjustment [IC951 ㊲]	EB	
3C		Not used		
3D		Not used		
3E		Not used		
3F		Not used		
40		Not used		
41		Not used		
42	EVR REC Y 1CH (L ME)	1ch Normal ME REC Y level adjustment [IC951 ㊱]	A9	
43	EVR REC Y 1CH (L MP)	1ch Normal MP REC Y level adjustment [IC951 ㊱]	A9	
44		Not used		
45		Not used		
46	EVR REC Y 2CH (L ME)	2ch Normal ME REC Y level adjustment [IC951 ㊱]	A9	
47	EVR REC Y 2CH (L MP)	2ch Normal MP REC Y level adjustment [IC951 ㊱]	A9	
48		Not used		
49		Not used		

Table 7-3-2. (2)

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
4A		Not used		
4B		Not used		
4C		Not used		
4D		Not used		
4E		Not used		
4F		Not used		
50			A2	A2
51			A1	A1
52		Not used		
53		Not used		
54			00	00
55			00	00
56			90	90
57			00	00
58			00	00
59			75	75
5A			E6	E6
5B			E6	E6
5C			E6	E6
5D			E6	E6
5E	EVR MT 1CH (L)	1ch Normal frequency characteristic adjustment [IC951 ⑱]	E6	
5F			E2	E2
60			E2	E2
61			E2	E2
62			E2	E2
63	EVR MT 2CH (L)	2ch Normal frequency characteristic adjustment [IC951 ⑳]	E2	
64		Not used		
65		Not used		
66		Not used		
67		Not used		
68		Not used		
69			E6	E6
6A			E6	E6
6B			E6	E6
6C			E6	E6
6D			E6	E6
6E		Not used		
6F		Not used		
70	EVR SYNC AGC	SYNC AGC adjustment [IC951 ㊳]	A4	
71	EVR COMB ADJ	Chroma comb filter adjustment [IC951 ㊴]	95	
72			B0	B0
73			B0	B0

Table 7-3-2. (3)

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
74		Not used		
75	EVR CARRIER (L)	Normal Y-FM carrier frequency adjustment [IC951 ㊸]	BB	
76		Not used		
77	EVR DEVIATION (L)	Normal Y-FM deviation adjustment [IC951 ㊹]	97	
78			00	00
79			00	00
7A			86	86
7B			86	86
7C			00	00
7D			00	00
7E			00	00
7F			00	00
80	EVR C EMPH (EE)	EE chroma emphasis adjustment [IC951 ㊷]	99	
81	EVR C EMPH (PB)	PB chroma emphasis adjustment [IC951 ㊷]	99	
82	EVR EMPH (EE)	EE EMPH input level adjustment [IC951 ㊽]	A5	
83	EVR EMPH (PB)	PB EMPH input level adjustment [IC951 ㊽]	A9	
84		Not used		
85			69	69
86			00	00
87	EVR DE-EMPH (PB L)	Normal PB DE-EMPH level adjustment [IC951 ㊼]	69	
88			B5	B5
89			B5	B5
8A			00	00
8B			48	48
8C			AF	AF
8D			AF	AF
8E	EVR 1.5 MHz IR	1.5 MHz IR adjustment [IC951 ㉖]	AF	
8F	EVR 1.5 MHz DEV	1.5 MHz deviation adjustment [IC951 ㉗]	AF	
90			60	60
91 to AF				
B0	BRIGHT	Bright adjustment [IC001 ①]	55	
B1			90	90
B2			95	95
B3	SUB BRI. R	White balance adjustment [IC001 ④]	A2	
B4	SUB BRI. B	White balance adjustment [IC001 ⑤]	70	
B5	CONTRAST	Contrast adjustment [IC001 ⑥]	99	
B6	VCO	VCO adjustment [IC001 ⑦]	CD	
B7	V COM	V COM adjustment [IC001 ⑧]	7B	
B8			6B	6B
B9			78	78
BA	H. POSITION	Horizontal display position adjustment [IC001 ⑪]	B7	
BB			92	92

ADD

Table 7-3-2. (4)

Address	Name	Function [ ] contains the adjustment voltage output terminal	Adjustment data	
			Initial value	Memo column
BC to D3				
D4	CCD FLAW PATTERN	CCDimager correction data (for backup)		
D5	CCD FLAW DATA			
D6	CCD FLAW DATA			
D7	CCD FLAW DATA			
D8	CCD FLAW DATA			
D9	CCD FLAW DATA			
DA	CCD FLAW DATA			
DB	CCD FLAW DATA			
DC	CCD FLAW DATA			
DD	CCD FLAW DATA			
DE	CCD FLAW DATA			
DF	CCD FLAW DATA			
E0	CCD FLAW DATA			
E1	CCD FLAW DATA			
E2	CCD FLAW DATA			
E3	CCD FLAW DATA			
E4	EMERGENCY LAST CODE	Last emergency code	00	
E5	EMERGENCY LAST MODE	Last emergency mode	00	
E6		N.C.	00	
E7		N.C.	00	
E8	EMERGENCY 2ND CODE	2nd emergency code	00	
E9	EMERGENCY 2ND MODE	2nd emergency mode	00	
EA		N.C.	00	
EB		N.C.	00	
EC	EMERGENCY 1ST CODE	1st emergency code	00	
ED	EMERGENCY 1ST MODE	1st emergency mode	00	
EE		N.C.	00	
EF		N.C.	00	

Table 7-3-2. (5)

3-5. VIDEO ADJUSTMENTS

5. Comb Filter Adjustment (VS-119 board)

Page. 7–54

Mode	Record
Signal	Color bar (Video input)
Measurement Point	Pin ⑭ of IC201 (Y COMB OUT)
Measuring Instrument	Oscilloscope
Adjusting Element	RV202 (PHASE)
Adjustment Page	D
Adjustment Address	71 (COMB ADJ)
Specified Value	Residual chroma component (A) is minimum.

Adjusting method:

1) Set to the VIDEO input mode.
2) Set to the record mode.
3) Release the protect.
   Page: 1, address: 00, data: 01
4) Set data: 00 to page: 2, address: 00.
   (Specification of category 00)
5) Set data: 04 to page: 2, address: B0.
6) After memorizing the data of address: 9A of page: 2, set data: 10 to the address. (TEST A mode setting)
7) Change the data of page: D, address: 71, and adjust the residual chroma component (A) to minimum.
8) Adjust RV202 so that the residual chroma component becames minimum.
9) Repeat 7) and 8).
10) Press the PAUSE button of the adjusting remote commander.

Processing after completing adjustments

1) Set the data memorized at step 6) to address: 9A of page: 2.
2) Set data: 00 to page: 2, address: B0.
   (Release of TEST A, B mode)

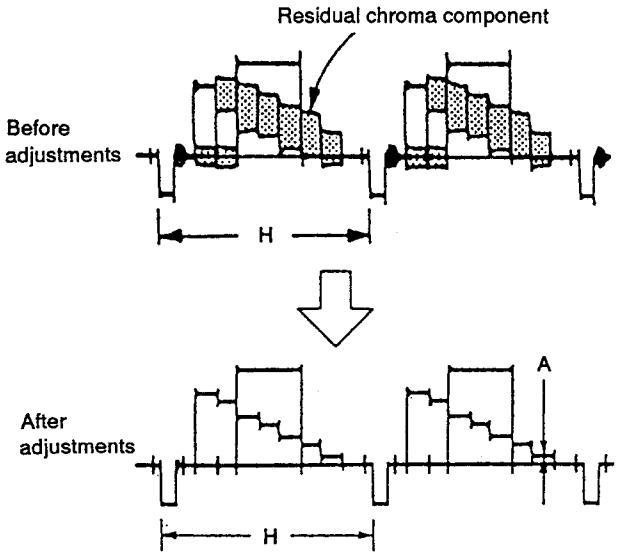


Fig. 7-3-11.

ADD

3-8. LCD SYSTEM ADJUSTMENTS

This adjustments does not have in the CCD-FX430 series, but it is newly added in the CCD-FX730V.

Note 1: The backlight (fluorescent tube) is driven by a 700 Vp-p, 70 kHz AC power supply.
Therefore, be careful not to touch the backlight holder as you will receive an electric shock.

Note 2: When replacing the LCD unit, ensure there will be no damages by static electricity.

[Adjusting connector]

Most measuring points for adjusting the LCD system are concentrated at CN002 of the PD-53 board. Connect the measuring equipments via the measuring pin tool. The following table lists the pin numbers and signal names of CN002.

Pin No.	Signal Name	Pin No.	Signal Name
1	VB	2	–8V
3	VG	4	+13V
5	VR	6	SPD
7	SYNC	8	$\overline{\text{HSY}}$
9	GND	10	GND

Table 7-3-31.

Measuring pin tool for LCD — Parts Code: J-6082-192-A
LCD CPC conversion board — Parts Code: J-6082-290-A

[Positions of RVs during adjustments]

Unless specified otherwise, set RV to the following positions and adjust.
RV001 (BRIGHT)····· Center click

[Menu Setting]

Set COLOR and HUE as follows on the menu screen.
COLOR····· Center
HUE····· Center

[Power supply voltage]

Adjust the power supply voltage for the battery terminal so that Pin ⑩ of the CN001 of the PD-53 board (LCD UNREG) become 6.5 ± 0.1 Vdc.

[Video Input Signal for Adjusting]

If the signal column specifies "Color bar signal whose chroma signal and burst signal are turned off", input a color bar signal whose chroma signal and burst signal have been turned off to the video terminal as the video input signal for adjusting. Check that the signal level of Pin ⑨ of CN001 of the PD-53 board is approx. 1.0 Vp-p before adjusting.

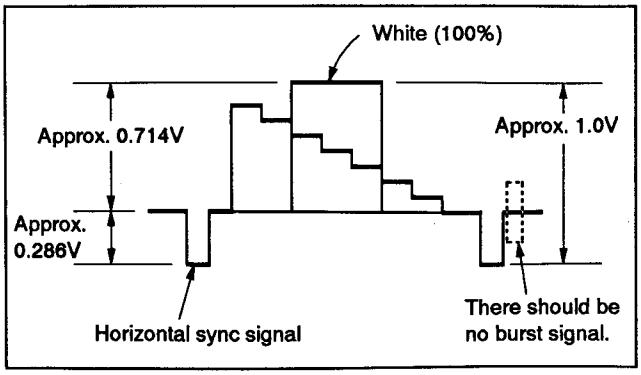
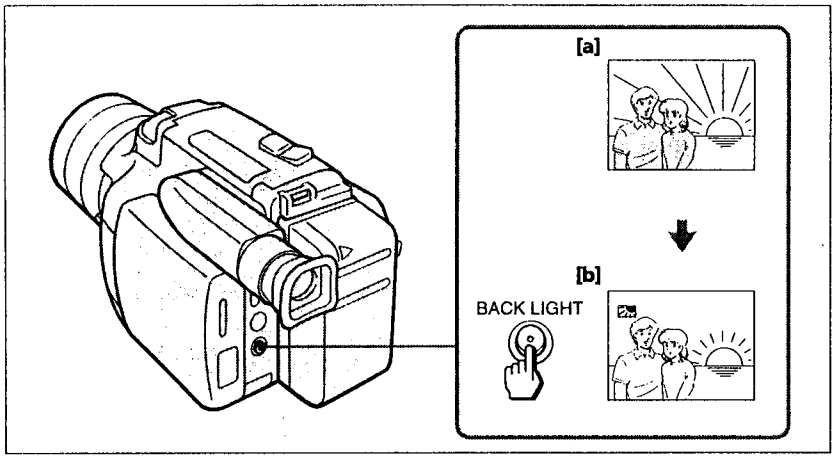


Fig. 7-3-32. Color bar signal whose chroma signal and burst signals are turned off

Shooting with Backlighting

When you shoot a subject with the light source behind the subject or a subject with a light background, use the BACK LIGHT function.

Press BACK LIGHT. The indicator appears in the viewfinder or on the LCD screen.



[a] Subject is too dark because of backlight.
[b] Subject becomes bright with backlight compensation.

After shooting

Be sure to release this adjustment condition by pressing BACK LIGHT again. The indicator disappears. Otherwise, the picture will be too bright under normal lighting condition.

This function is also effective under the following conditions:

- On snow, e.g. at a ski resort
- At the beach under strong sunshine
- A subject with a light source nearby or a mirror reflecting light
- A white subject against a white background. Especially when you shoot a person wearing shiny clothes made of silk or synthetic fiber, his or her face tends to become dark if you do not use this function.

Using the PROGRAM AE Function

You can select from four PROGRAM AE (Auto Exposure) modes to suit your shooting situation. When you use PROGRAM AE, you can get a Portrait effect (the subject is in focus and the background is out of focus), capture high-speed action, or record night views.

Selecting the Best Mode

Select one of four modes, referring to the following.

Portrait mode
- A still subject such as a person or a flower
- Zooming in on a subject in the telephoto mode
- A subject behind an obstacle such as a net

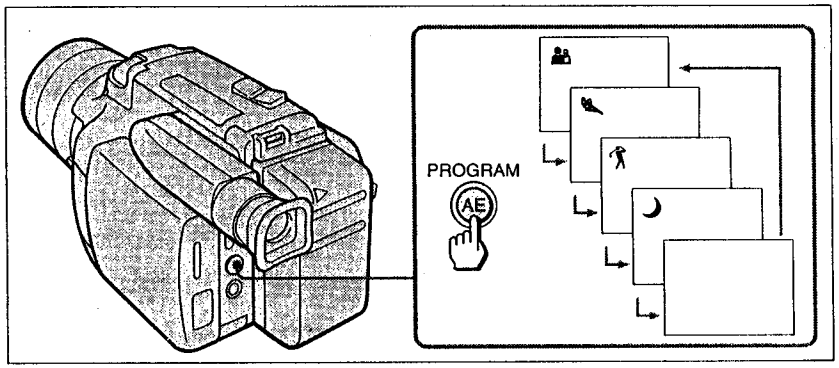
Sports mode
- Outdoor sports scenes such as football, tennis, golf or skiing
- A landscape from a moving car

High-speed shutter mode
- A golf swing or a tennis match in fine weather with the ball captured clearly
- Playing back certain scenes with high-speed movements in a clear, sharp picture

Twilight mode
- Recording night views, neon signs or fireworks

Using the PROGRAM AE Function

Keep pressing PROGRAM AE until the desired mode appears. The indicator of the selected PROGRAM AE mode appears in the viewfinder or on the LCD screen.



Note on shutter speed

The shutter speed in each PROGRAM AE mode is as follows:

Portrait mode — between 1/60 to 1/2000
Sports mode — between 1/60 to 1/500
High-speed shutter mode — 1/4000
Twilight mode — 1/60
Normal mode — 1/60

Fade-in and Fade-out

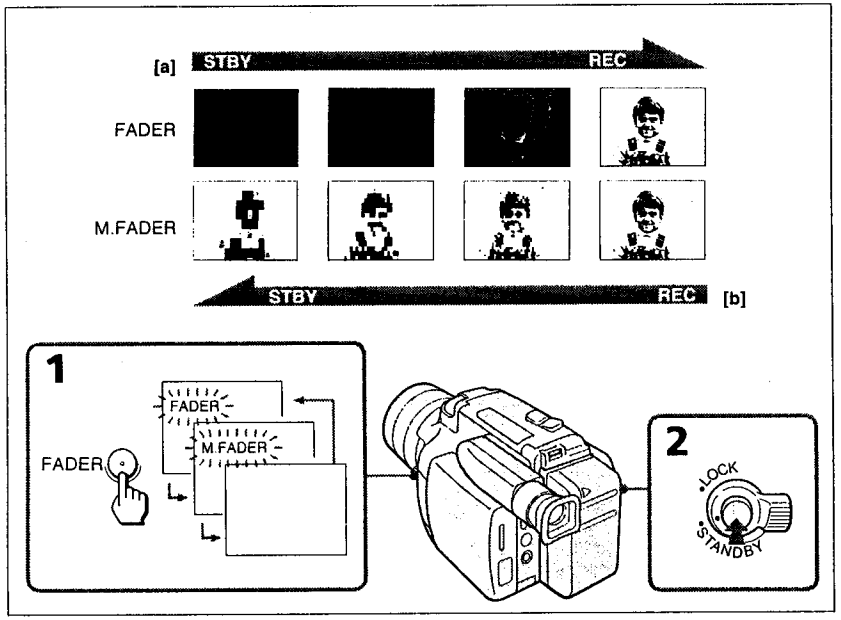
You can fade in or out to give your recording a professional appearance.
When fading in, the picture gradually fades in from black or mosaic while the sound increases. When fading out, the picture gradually fades to black or mosaic while the sound decreases.

When Fading in [a]

(1) While the camcorder is in Standby mode, press FADER. The fade indicator starts flashing.
(2) Press START/STOP to start recording. The fade indicator stops flashing.

When Fading out [b]

(1) During recording, press FADER. The fade indicator starts flashing.
(2) Press START/STOP to stop recording. The fade indicator stops flashing, and then recording stops.



To Cancel the Fade-in/Fade-out Function

Before pressing START/STOP, press FADER until the fade indicator disappears.

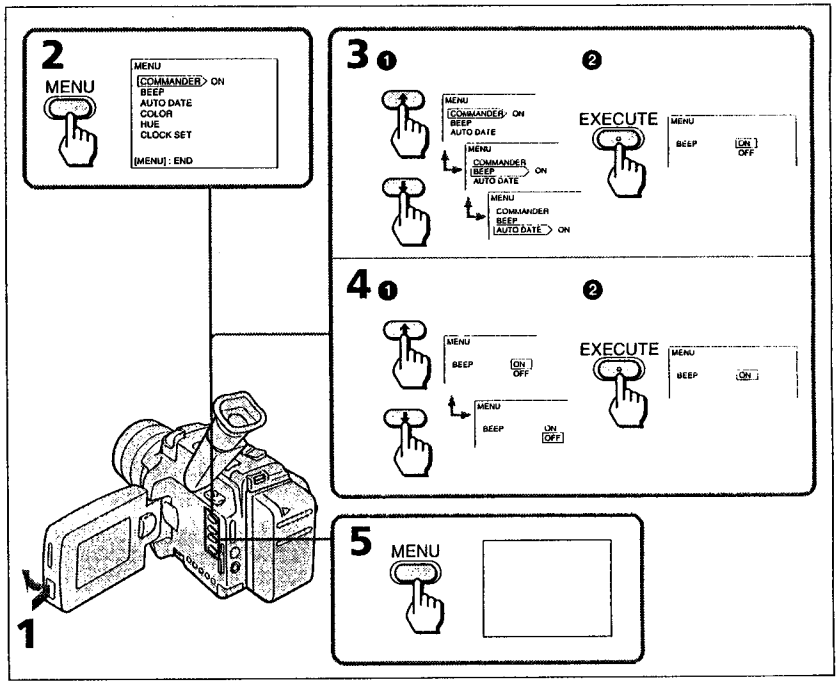
When the date, time or age indicator is displayed

The date, time or age indicator does not fade in nor fade out.

Changing the Mode Settings

You can change the mode settings in the menu system to further enjoy the features and functions of the camcorder.

(1) While pressing PUSH OPEN, open the LCD panel.
(2) Press MENU to display the menu on the LCD screen.
(3) Press ♦ or ♦ to select the desired item, then press EXECUTE.
(4) Press ♦ or ♦ to set the desired mode, then press EXECUTE. If you want to change the other modes, repeat steps 2 and 3.
(5) Press MENU to erase the menu display.



Note on BACK UP

When the BACK UP indicator appears on the menu display, the settings are retained even when the battery is removed, as long as the lithium battery is in place.

Selecting the Mode Setting of Each Item

Item for both VTR and CAMERA Mode

BEEP <ON/OFF>

- Select ON to turn the beep sound on.
- Select OFF to turn the beep sound off.

See the next page for further information.

Changing the Mode Settings

COMMANDER <ON/OFF>
- Select ON when using the supplied Remote Commander for the camcorder.
- Select OFF when not using the Remote Commander.

COLOR
Select this item and change the level of the indicator by pressing ♦ or ♦ to adjust the color intensity of the picture when using the LCD.

HUE
Select this item and move the indicator by pressing ♦ or ♦ to adjust the hue (greenish or reddish tone) of the picture when using the LCD.

Items for CAMERA Mode only

AUTO DATE <ON/OFF>
- Select ON to record the date for 10 seconds after recording has started.
- Select OFF to not record the date.

CLOCK SET
Select this item to reset the date or time.

Items for VTR Mode only

EDIT <ON/OFF>
- Select ON to minimize picture deterioration when editing.
- Normally select OFF.

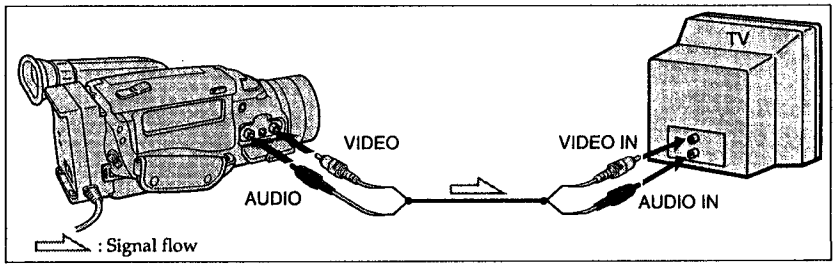
Connections for Playback

You can use the camcorder as a VCR. Connect the camcorder to the TV by using the supplied A/V connecting cable. There are two ways to connect the camcorder to your TV. When monitoring the playback picture by connecting the camcorder to your TV, we recommend you use house current for the power source (p. 18).

While playing back on a TV screen, turn off the speaker volume control of the camcorder. Otherwise, picture distortion may occur.

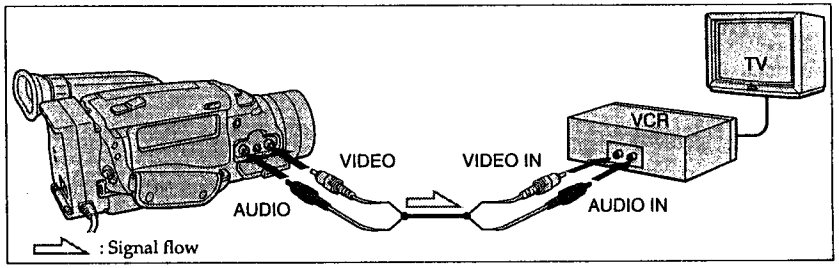
Connecting Directly to a TV

Connect the camcorder to the inputs on the TV by using the supplied A/V connecting cable. Set the TV/VCR selector on the TV to VCR.



If your VCR is already connected to a TV

Connect the camcorder to the LINE IN inputs on the VCR by using the A/V connecting cable. Set the input selector on the VCR to LINE. Set the TV/VCR selector on the TV to VCR.



To connect a TV or a VTR without audio/video input jacks

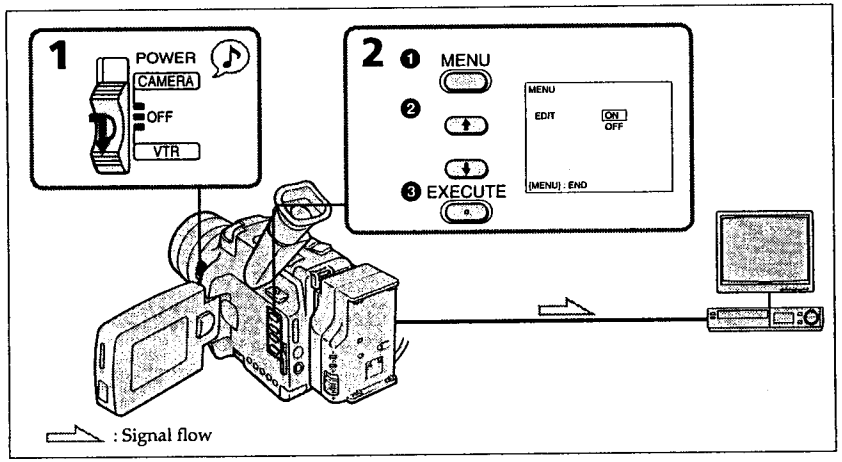
Use an optional RFU adaptor.

Editing onto Another Tape

You can create your own video program by editing with any other 8 8 mm, Hi8 Hi8, VHS VHS, S-VHS S-VHS, VHSC VHSC, S-VHSC S-VHSC, Betamax or ED Beta ED Betamax VCR that has audio/video inputs.

Before Editing

Connect the camcorder to the VCR using the supplied A/V connecting cable. (p. 27)
Set the input selector on the VCR to LINE, if available.
(1) Set the POWER switch to VTR.
(2) Set EDIT to ON in the menu system (p. 26).



Starting Editing

Turn down the volume of the camcorder while editing. Otherwise, picture distortion may occur.
(1) Insert a blank tape (or a tape you want to record over) into the VCR and insert your recorded tape into the camcorder.
(2) Play back the recorded tape on the camcorder until you locate the point where you want to start editing, then put the camcorder in Playback pause mode.
(3) On the VCR, locate the recording start point and put the VCR in recording pause mode.
(4) Press II on the camcorder and VCR simultaneously to start editing.

To Edit More Scenes

Repeat steps 2 to 4.

To Stop Editing

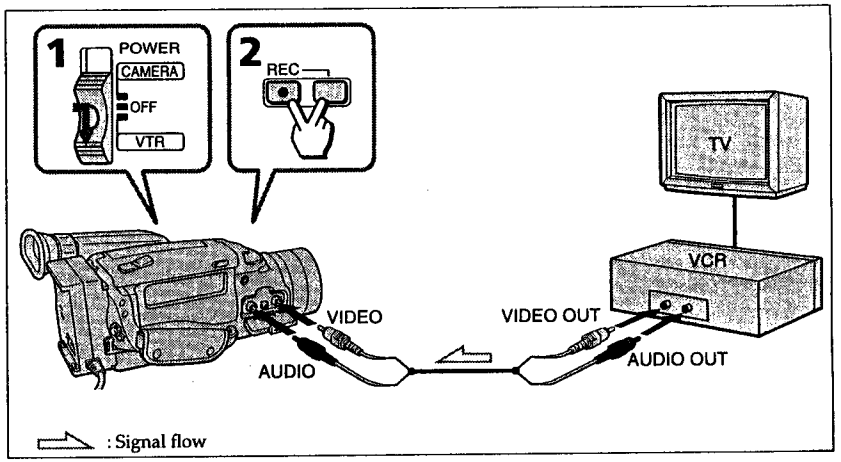
Press □ on both the camcorder and the VCR.

Use of the EDITSEARCH button

You can play back the tape in the normal/reverse direction by holding down EDITSEARCH during playback pause mode. You can also play back still pictures successively at specific intervals by pressing EDITSEARCH intermittently.

Recording from a TV or VCR

You can record a tape from another VCR or a TV program from a TV that has audio/video outputs.
Connect the camcorder to the TV or VCR.
Turn down the volume of the camcorder while editing. Otherwise, the picture distortion may occur.
(1) Set the POWER switch to VTR.
(2) Press REC ● and the button on the right together at the point where you want to start recording.



To Check the Picture from a TV or VCR before Recording

You can check the picture in the viewfinder or on the LCD screen.

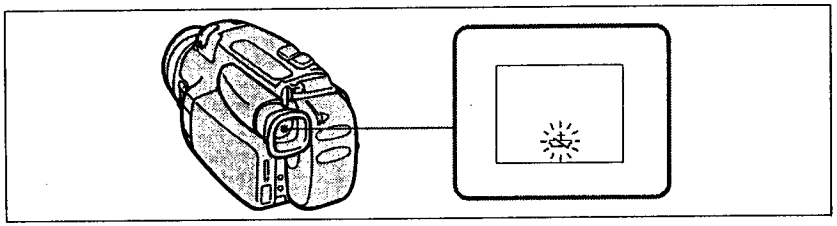
To stop Recording

Press □.

Additional Information

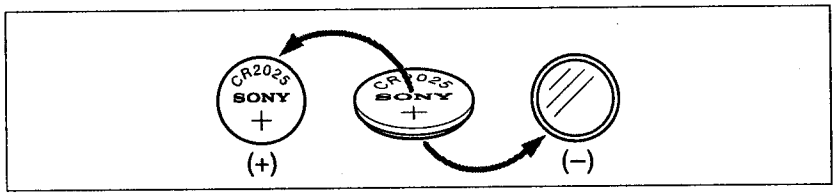
Changing the Lithium Battery

Your camcorder is supplied with a lithium battery installed. The lithium battery for the camcorder lasts for about 1 year under normal operation. When the battery becomes weak or dead, the ⚠ indicator flashes in the viewfinder or on the LCD screen for about 5 seconds when you set the POWER switch to CAMERA. In this case, **replace the battery with a Sony CR2025 or Duracell DL-2025 lithium battery. Use of any other battery may present a risk of fire or explosion.**



Note on Lithium Battery

The lithium battery has a positive (+) side and a negative (–) side as illustrated. Be sure to insert the lithium battery with the positive side facing out.



WARNING

The battery may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

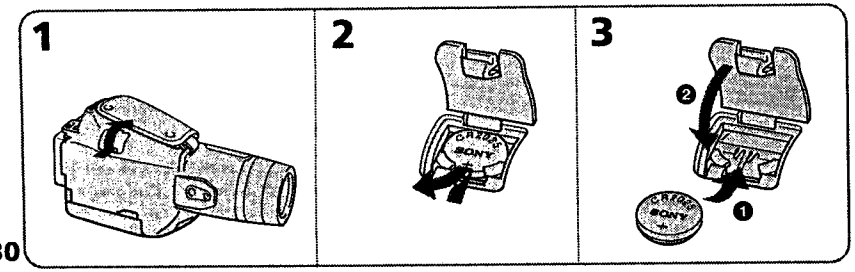
Caution

Keep the lithium battery out of the reach of children. Should the battery be swallowed, consult a doctor immediately.

Changing the Lithium Battery

When replacing the lithium battery, keep the battery pack or other power source attached. Otherwise, you will need to reset the date, time, age and other BACK UP items in the menu system.

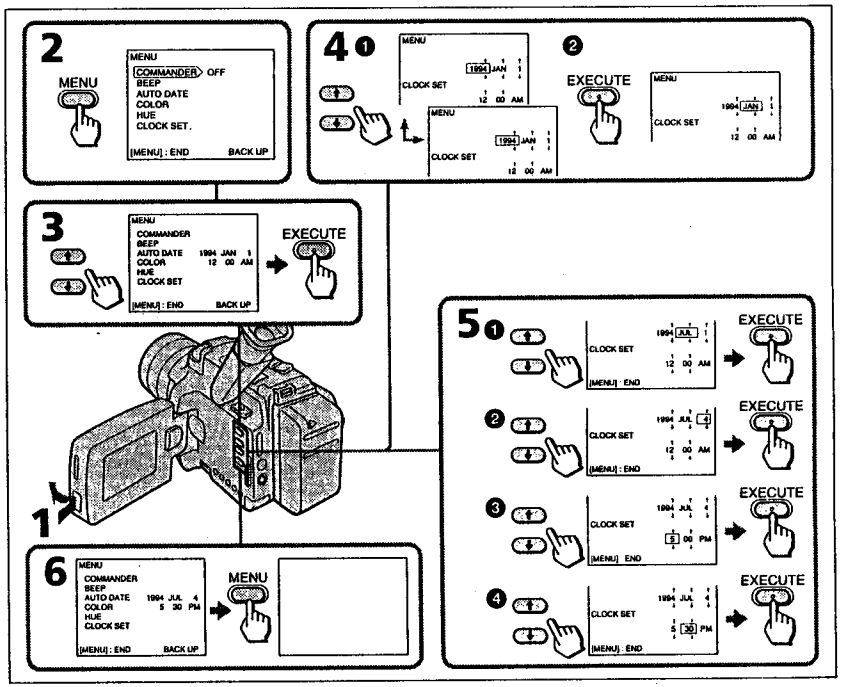
(1) Open the lid of the lithium battery compartment under the grip strap of the camcorder.
(2) Push the battery down once and pull it out from the holder.
(3) Install the lithium battery with the positive (+) side facing out. Close the lid.



Resetting the Date or Time

You can reset the date or time in the menu system.

(1) While pressing PUSH OPEN, open the LCD panel.
(2) Press MENU to display the menu on the LCD screen.
(3) Select CLOCK SET, then press EXECUTE.
(4) Press ♦ or ♦ to adjust the year, and then press EXECUTE.
(5) Press ♦ or ♦ to adjust the month, day, hour and minutes, and then press EXECUTE. Note that when you hold down ♦ or ♦, the indications in the menu display advance faster.
(6) Press MENU to erase the menu display.



To Check the Preset Date and Time

Press DATE(+) to display the date indicator.
Press TIME(NEXT) to display the time indicator. When you press the same button again, the indicator goes off.

Note on the setting of the year

When you set the year, each time you press DATE(+) the digits change as follows.

1994 → 1995 → - - - → 2024

Note on the time indicator

The internal clock of this camcorder operates on a 12-hour cycle.
12:00 AM stands for midnight.
12:00 PM stands for noon.

Playback Modes

The playback mode (SP or LP) is selected automatically according to the format in which the tape has been recorded. The quality of the recorded picture in LP mode, however, will not be as good as that in SP mode.

LP (long play) mode
When you play back a tape recorded in LP mode, the LP indicator lights up on the LCD screen or in the viewfinder. This camcorder cannot record a tape in LP mode.

Foreign 8 mm video
You cannot play back software recorded on a different TV color system. Because the TV color systems differ from country to country, you may not be able to play back foreign pre-recorded software. Refer to page 39 to check the TV color system of foreign countries.

Tips for Using the Battery Pack

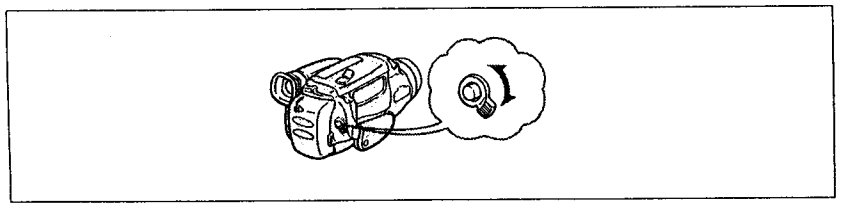
This section shows you how you can get the most out of your battery pack.

Preparing the Battery Pack

Always Carry Additional Batteries
Have sufficient battery pack power to do 2 to 3 times as much recording as you have planned.

Battery Life is Shorter in Cold Environment
Battery efficiency is decreased and the battery will be used up more quickly if you are recording in a cold environment.

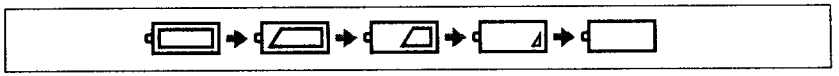
To Save Battery Power
Turn STANDBY on the camcorder down when not recording to save battery power.
A smooth transition between scenes can be made even if recording is stopped and started again. While you are positioning the subject, selecting an angle, looking through the viewfinder lens or at the LCD screen, the lens moves automatically and the battery is used. The battery is also used when a tape is inserted or removed.



Tips for Using the Battery Pack

When to Replace the Battery Pack

While you are using your camcorder, the remaining battery indicator in the viewfinder or on the LCD screen decreases gradually as battery power is used up.



When the remaining battery indicator reaches the lowest point, the ⌧ indicator appears and starts flashing in the viewfinder or on the LCD screen. **[a]**
When the ⌧ indicator in the viewfinder changes from slow flashing to rapid flashing while you are recording, slide the POWER switch to OFF on the camcorder and replace the battery pack. Leave the tape in the camcorder to obtain a smooth transition between scenes after the battery pack is replaced.

Note on the remaining battery indicator
The remaining battery indicator of the camcorder may indicate a different remaining capacity from that of a battery pack with its own indicator (not supplied). The indicator on the battery pack is more accurate.

Notes on the Rechargeable Battery Pack

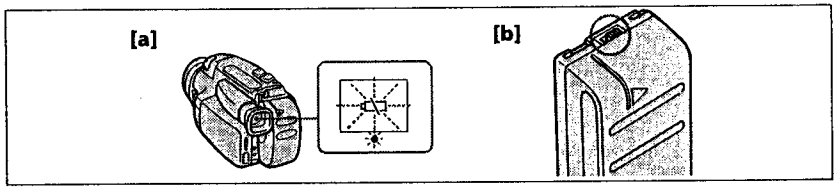
The Battery Pack Heats Up
During charging or recording, the battery pack heats up. This is caused by energy that has been generated and a chemical change that has occurred inside the battery pack. This is not cause for concern.

Battery Pack Care
- Remove the battery pack from the camcorder after using the battery pack, and keep it in a cool place. When the battery pack is attached to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is set to OFF, which shortens battery life.
- The battery pack is always discharging even when it is not in use after charging. Therefore, you should charge the battery pack right before using the camcorder.

How to Use the Switch on the Battery Pack
This switch is provided so that you can mark the charged battery pack. Set the switch to the "no mark" position when charging is completed. Set the switch to the "red mark" position when the battery is used up (or in whichever direction you want to remind yourself). **[b]**

The Life of the Battery Pack
If the battery indicator flashes rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one.

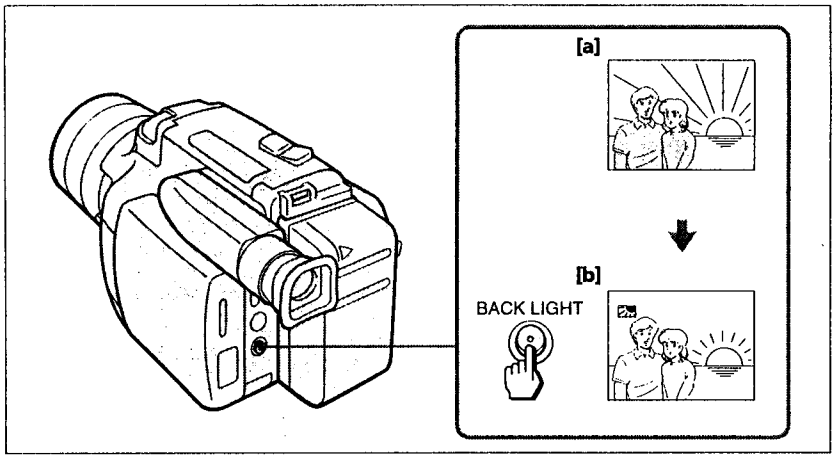
Charging Temperature
You should charge batteries at temperatures from 50° F to 86° F (from 10° C to 30° C). Lower temperatures require a longer charging time.



Shooting with Backlighting

When you shoot a subject with the light source behind the subject or a subject with a light background, use the BACK LIGHT function.

Press BACK LIGHT. The indicator appears in the viewfinder or on the LCD screen.



[a] Subject is too dark because of backlight.
[b] Subject becomes bright with backlight compensation.

After shooting

Be sure to release this adjustment condition by pressing BACK LIGHT again. The indicator disappears. Otherwise, the picture will be too bright under normal lighting condition.

This function is also effective under the following conditions:

- On snow, e.g. at a ski resort
- At the beach under strong sunshine
- A subject with a light source nearby or a mirror reflecting light
- A white subject against a white background. Especially when you shoot a person wearing shiny clothes made of silk or synthetic fiber, his or her face tends to become dark if you do not use this function.

Using the PROGRAM AE Function

You can select from four PROGRAM AE (Auto Exposure) modes to suit your shooting situation. When you use PROGRAM AE, you can get a Portrait effect (the subject is in focus and the background is out of focus), capture high-speed action, or record night views.

Selecting the Best Mode

Select one of four modes, referring to the following.

Portrait mode
- A still subject such as a person or a flower
- Zooming in on a subject in the telephoto mode
- A subject behind an obstacle such as a net

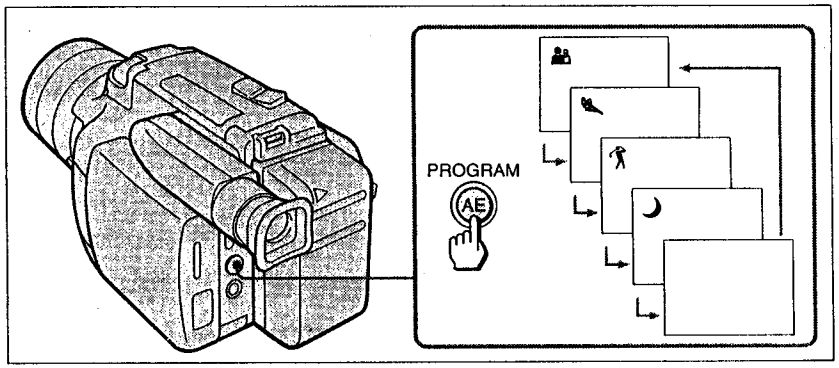
Sports mode
- Outdoor sports scenes such as football, tennis, golf or skiing
- A landscape from a moving car

High-speed shutter mode
- A golf swing or a tennis match in fine weather with the ball captured clearly
- Playing back certain scenes with high-speed movements in a clear, sharp picture

Twilight mode
- Recording night views, neon signs or fireworks

Using the PROGRAM AE Function

Keep pressing PROGRAM AE until the desired mode appears. The indicator of the selected PROGRAM AE mode appears in the viewfinder or on the LCD screen.



Note on shutter speed

The shutter speed in each PROGRAM AE mode is as follows:

Portrait mode — between 1/60 to 1/2000
Sports mode — between 1/60 to 1/500
High-speed shutter mode — 1/4000
Twilight mode — 1/60
Normal mode — 1/60

Fade-in and Fade-out

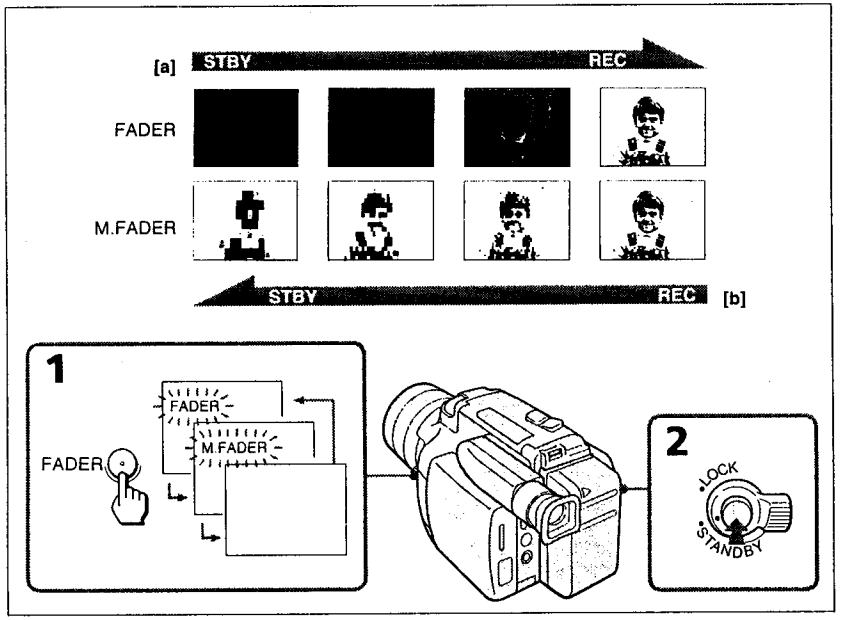
You can fade in or out to give your recording a professional appearance.
When fading in, the picture gradually fades in from black or mosaic while the sound increases. When fading out, the picture gradually fades to black or mosaic while the sound decreases.

When Fading in [a]

(1) While the camcorder is in Standby mode, press FADER. The fade indicator starts flashing.
(2) Press START/STOP to start recording. The fade indicator stops flashing.

When Fading out [b]

(1) During recording, press FADER. The fade indicator starts flashing.
(2) Press START/STOP to stop recording. The fade indicator stops flashing, and then recording stops.



To Cancel the Fade-in/Fade-out Function

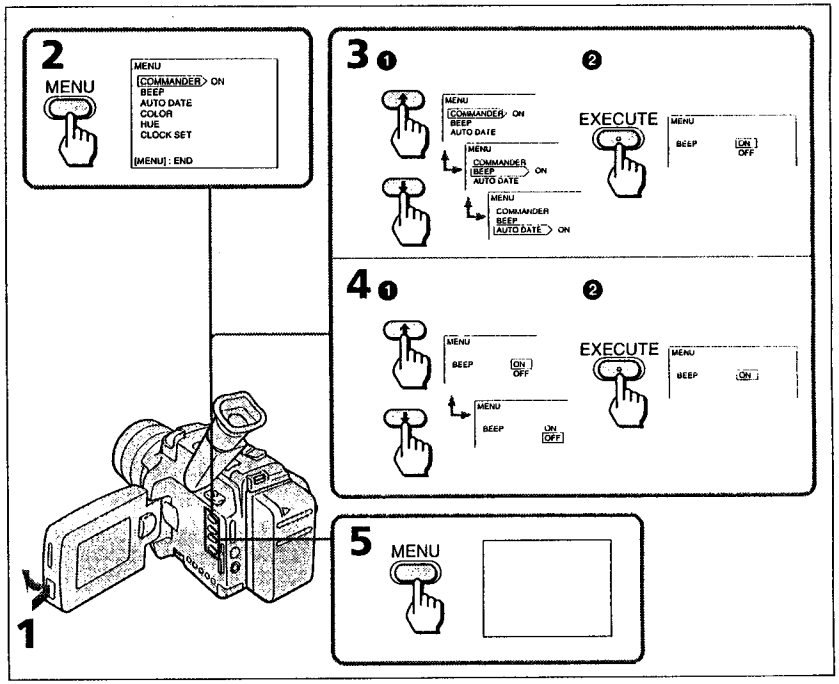
Before pressing START/STOP, press FADER until the fade indicator disappears.

When the date, time or age indicator is displayed

The date, time or age indicator does not fade in nor fade out.

Changing the Mode Settings

You can change the mode settings in the menu system to further enjoy the features and functions of the camcorder.
(1) While pressing PUSH OPEN, open the LCD panel.
(2) Press MENU to display the menu on the LCD screen.
(3) Press ♦ or ♦ to select the desired item, then press EXECUTE.
(4) Press ♦ or ♦ to set the desired mode, then press EXECUTE. If you want to change the other modes, repeat steps 2 and 3.
(5) Press MENU to erase the menu display.



Note on BACK UP

When the BACK UP indicator appears on the menu display, the settings are retained even when the battery is removed, as long as the lithium battery is in place.

Selecting the Mode Setting of Each Item

Item for both VTR and CAMERA Mode

BEEP <ON/OFF>

- Select ON to turn the beep sound on.
- Select OFF to turn the beep sound off.

See the next page for further information.

Changing the Mode Settings

COMMANDER <ON/OFF>
- Select ON when using the supplied Remote Commander for the camcorder.
- Select OFF when not using the Remote Commander.

COLOR
Select this item and change the level of the indicator by pressing ♦ or ♦ to adjust the color intensity of the picture when using the LCD.

HUE
Select this item and move the indicator by pressing ♦ or ♦ to adjust the hue (greenish or reddish tone) of the picture when using the LCD.

Items for CAMERA Mode only

AUTO DATE <ON/OFF>
- Select ON to record the date for 10 seconds after recording has started.
- Select OFF to not record the date.

CLOCK SET
Select this item to reset the date or time.

Items for VTR Mode only

EDIT <ON/OFF>
- Select ON to minimize picture deterioration when editing.
- Normally select OFF.

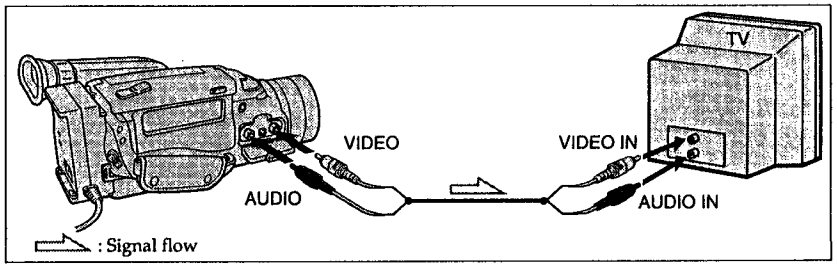
Connections for Playback

You can use the camcorder as a VCR. Connect the camcorder to the TV by using the supplied A/V connecting cable. There are two ways to connect the camcorder to your TV. When monitoring the playback picture by connecting the camcorder to your TV, we recommend you use house current for the power source (p. 18).

While playing back on a TV screen, turn off the speaker volume control of the camcorder. Otherwise, picture distortion may occur.

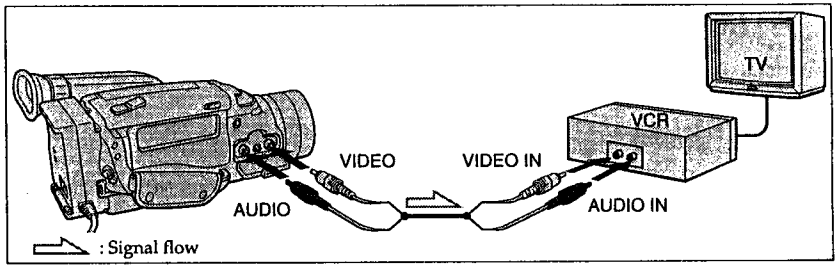
Connecting Directly to a TV

Connect the camcorder to the inputs on the TV by using the supplied A/V connecting cable. Set the TV/VCR selector on the TV to VCR.



If your VCR is already connected to a TV

Connect the camcorder to the LINE IN inputs on the VCR by using the A/V connecting cable. Set the input selector on the VCR to LINE. Set the TV/VCR selector on the TV to VCR.



To connect a TV or a VTR without audio/video input jacks

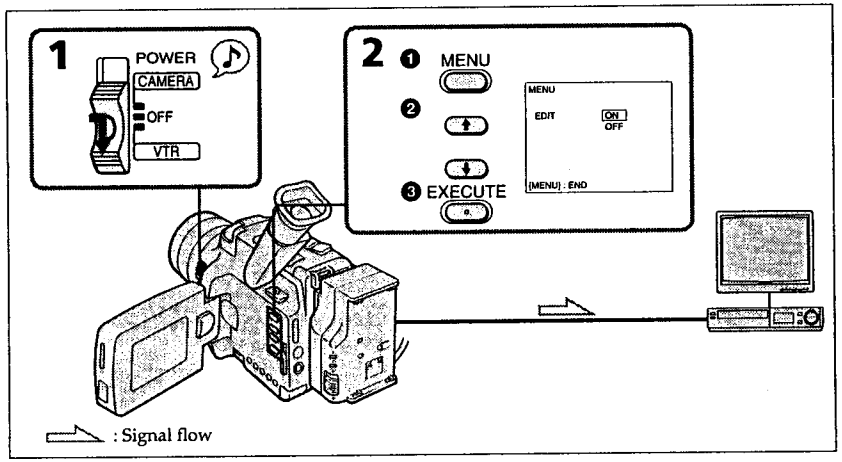
Use an optional RFU adaptor.

Editing onto Another Tape

You can create your own video program by editing with any other 8 8 mm, Hi8 Hi8, VHS VHS, S-VHS S-VHS, VHSC VHSC, S-VHSC S-VHSC, Betamax or ED Beta ED Betamax VCR that has audio/video inputs.

Before Editing

Connect the camcorder to the VCR using the supplied A/V connecting cable. (p. 27)
Set the input selector on the VCR to LINE, if available.
(1) Set the POWER switch to VTR.
(2) Set EDIT to ON in the menu system (p. 26).



Starting Editing

Turn down the volume of the camcorder while editing. Otherwise, picture distortion may occur.
(1) Insert a blank tape (or a tape you want to record over) into the VCR and insert your recorded tape into the camcorder.
(2) Play back the recorded tape on the camcorder until you locate the point where you want to start editing, then put the camcorder in Playback pause mode.
(3) On the VCR, locate the recording start point and put the VCR in recording pause mode.
(4) Press II on the camcorder and VCR simultaneously to start editing.

To Edit More Scenes

Repeat steps 2 to 4.

To Stop Editing

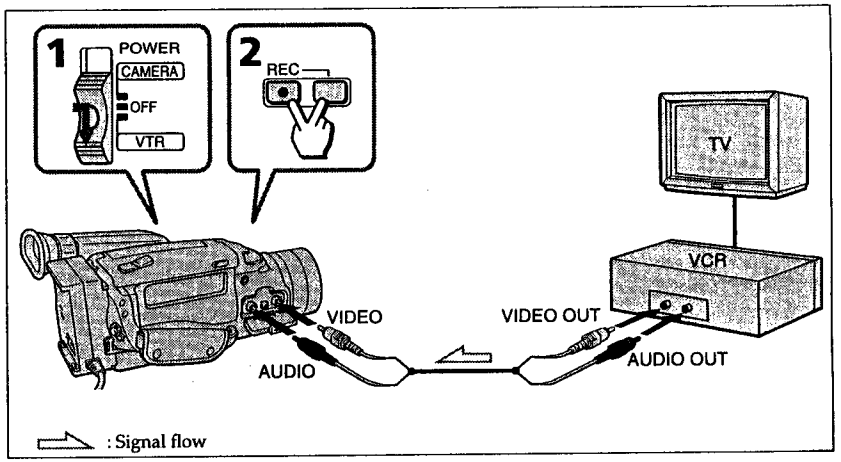
Press □ on both the camcorder and the VCR.

Use of the EDITSEARCH button

You can play back the tape in the normal/reverse direction by holding down EDITSEARCH during playback pause mode. You can also play back still pictures successively at specific intervals by pressing EDITSEARCH intermittently.

Recording from a TV or VCR

You can record a tape from another VCR or a TV program from a TV that has audio/video outputs.
Connect the camcorder to the TV or VCR.
Turn down the volume of the camcorder while editing. Otherwise, the picture distortion may occur.
(1) Set the POWER switch to VTR.
(2) Press REC ● and the button on the right together at the point where you want to start recording.



To Check the Picture from a TV or VCR before Recording

You can check the picture in the viewfinder or on the LCD screen.

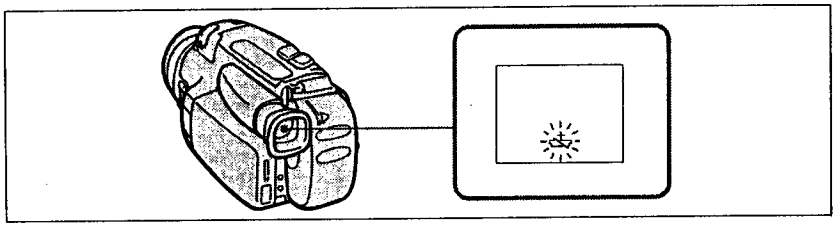
To stop Recording

Press □.

Additional Information

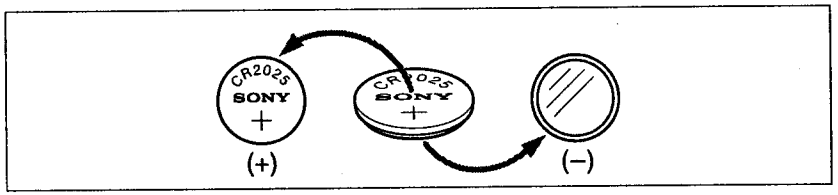
Changing the Lithium Battery

Your camcorder is supplied with a lithium battery installed. The lithium battery for the camcorder lasts for about 1 year under normal operation. When the battery becomes weak or dead, the ⚠ indicator flashes in the viewfinder or on the LCD screen for about 5 seconds when you set the POWER switch to CAMERA. In this case, **replace the battery with a Sony CR2025 or Duracell DL-2025 lithium battery. Use of any other battery may present a risk of fire or explosion.**



Note on Lithium Battery

The lithium battery has a positive (+) side and a negative (–) side as illustrated. Be sure to insert the lithium battery with the positive side facing out.



WARNING

The battery may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

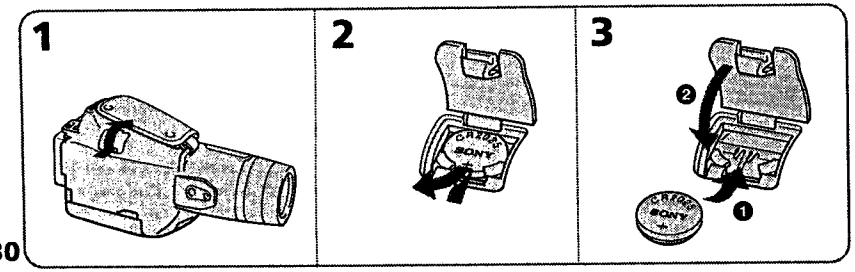
Caution

Keep the lithium battery out of the reach of children. Should the battery be swallowed, consult a doctor immediately.

Changing the Lithium Battery

When replacing the lithium battery, keep the battery pack or other power source attached. Otherwise, you will need to reset the date, time, age and other BACK UP items in the menu system.

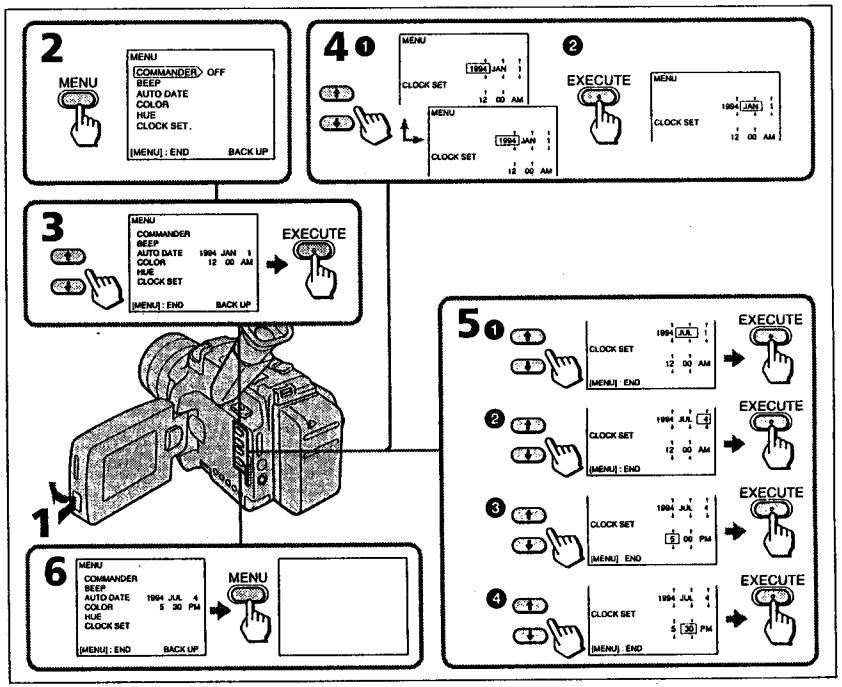
(1) Open the lid of the lithium battery compartment under the grip strap of the camcorder.
(2) Push the battery down once and pull it out from the holder.
(3) Install the lithium battery with the positive (+) side facing out. Close the lid.



Resetting the Date or Time

You can reset the date or time in the menu system.

(1) While pressing PUSH OPEN, open the LCD panel.
(2) Press MENU to display the menu on the LCD screen.
(3) Select CLOCK SET, then press EXECUTE.
(4) Press ♦ or ♦ to adjust the year, and then press EXECUTE.
(5) Press ♦ or ♦ to adjust the month, day, hour and minutes, and then press EXECUTE. Note that when you hold down ♦ or ♦, the indications in the menu display advance faster.
(6) Press MENU to erase the menu display.



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When you set the year, each time you press DATE(+) the digits change as follows.

1994 → 1995 → - - - → 2024

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The playback mode (SP or LP) is selected automatically according to the format in which the tape has been recorded. The quality of the recorded picture in LP mode, however, will not be as good as that in SP mode.

LP (long play) mode
When you play back a tape recorded in LP mode, the LP indicator lights up on the LCD screen or in the viewfinder. This camcorder cannot record a tape in LP mode.

Foreign 8 mm video
You cannot play back software recorded on a different TV color system. Because the TV color systems differ from country to country, you may not be able to play back foreign pre-recorded software. Refer to page 39 to check the TV color system of foreign countries.

Tips for Using the Battery Pack

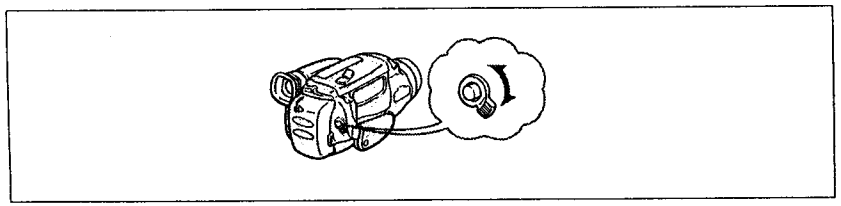
This section shows you how you can get the most out of your battery pack.

Preparing the Battery Pack

Always Carry Additional Batteries
Have sufficient battery pack power to do 2 to 3 times as much recording as you have planned.

Battery Life is Shorter in Cold Environment
Battery efficiency is decreased and the battery will be used up more quickly if you are recording in a cold environment.

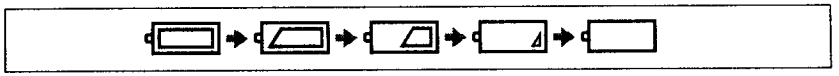
To Save Battery Power
Turn STANDBY on the camcorder down when not recording to save battery power.
A smooth transition between scenes can be made even if recording is stopped and started again. While you are positioning the subject, selecting an angle, looking through the viewfinder lens or at the LCD screen, the lens moves automatically and the battery is used. The battery is also used when a tape is inserted or removed.



Tips for Using the Battery Pack

When to Replace the Battery Pack

While you are using your camcorder, the remaining battery indicator in the viewfinder or on the LCD screen decreases gradually as battery power is used up.



When the remaining battery indicator reaches the lowest point, the ⌧ indicator appears and starts flashing in the viewfinder or on the LCD screen. **[a]**
When the ⌧ indicator in the viewfinder changes from slow flashing to rapid flashing while you are recording, slide the POWER switch to OFF on the camcorder and replace the battery pack. Leave the tape in the camcorder to obtain a smooth transition between scenes after the battery pack is replaced.

Note on the remaining battery indicator
The remaining battery indicator of the camcorder may indicate a different remaining capacity from that of a battery pack with its own indicator (not supplied). The indicator on the battery pack is more accurate.

Notes on the Rechargeable Battery Pack

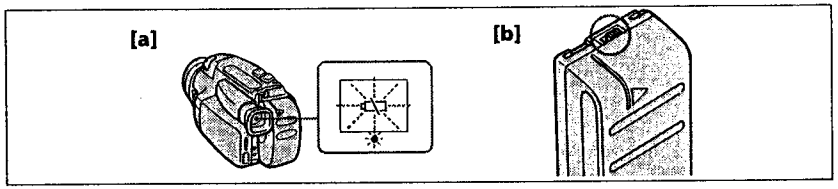
The Battery Pack Heats Up
During charging or recording, the battery pack heats up. This is caused by energy that has been generated and a chemical change that has occurred inside the battery pack. This is not cause for concern.

Battery Pack Care
- Remove the battery pack from the camcorder after using the battery pack, and keep it in a cool place. When the battery pack is attached to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is set to OFF, which shortens battery life.
- The battery pack is always discharging even when it is not in use after charging. Therefore, you should charge the battery pack right before using the camcorder.

How to Use the Switch on the Battery Pack
This switch is provided so that you can mark the charged battery pack. Set the switch to the "no mark" position when charging is completed. Set the switch to the "red mark" position when the battery is used up (or in whichever direction you want to remind yourself). **[b]**

The Life of the Battery Pack
If the battery indicator flashes rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one.

Charging Temperature
You should charge batteries at temperatures from 50° F to 86° F (from 10° C to 30° C). Lower temperatures require a longer charging time.



Tips for Using the Battery Pack

Notes on Charging

A Brand-new Battery Pack

A brand-new battery pack is not charged. Before using the battery pack, charge it completely.

Before Recharging a Used Battery Pack

- Make sure to use up the battery before recharging.
- If recording is completed before the ⟲ indicator appears in the viewfinder, you should remove the tape, slide the POWER switch to CAMERA, turn STANDBY up, and leave the camcorder until the battery indicator flashes rapidly.
- When you use the AC-S10 power adaptor or the BC-S10 portable battery charger, you can use the discharging function.
- **Charging a usable battery pack causes a lowering of battery capacity. Battery capacity can be recovered if you fully discharge and charge the battery pack again.**

After Long Storage

Recharge the battery pack after a long period of storage. If the battery pack is charged fully but not used for a long time (about 1 year), it becomes discharged. Charge it again, but in this case the battery life will be shorter than normal. After several charging and discharging cycles, the battery life will recover its original capacity.

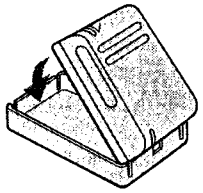
Notes on the Terminals

If the terminals (metal parts on the back) are not clean, the battery duration will be shortened. When the terminals are not clean or when the battery pack has not been used for a long time, repeatedly install and remove the battery pack. This improves the contact condition. Also, wipe the + and – terminals with a soft cloth or paper.

Be Sure to Observe the Following

- To prevent an accident caused by a short circuit, do not allow metal objects such as a necklace to touch the battery terminals. When carrying the battery pack, attach the terminal cover. **[c]**
- Keep the battery pack away from fire.
- Keep the battery pack dry.
- Do not open nor convert the battery pack.
- Do not expose the battery pack to any mechanical shock.

[c]



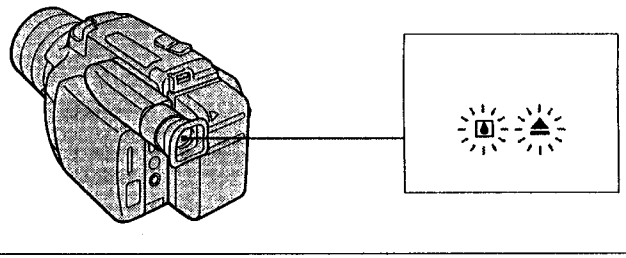
Maintenance Information and Precautions

Moisture Condensation

If the camcorder is brought directly from a cold place to a warm place, moisture may condense inside the camcorder, on the surface of the tape, or on the lens. In this condition, the tape may stick to the head drum and be damaged or the camcorder may not operate correctly. To prevent possible damage under these circumstances, the camcorder is furnished with moisture sensors. However, take the following precautions.

Inside the Camcorder

When the ◘ and ⏏ indicators flash in the viewfinder or on the LCD screen, moisture has condensed inside the camcorder. If this happens, no other functions except for tape ejection will work.
Eject the tape, turn off the camcorder and leave it with the cassette holder open for at least one hour. The camcorder can be used again if the ◘ indicator does not appear when the power is turned on again.



On the Surface of the Tape

If there is moisture on the surface of the tape, when you insert the cassette and press a tape transport button (▷ PLAY, etc.), the ⏏ indicator in the viewfinder or on the LCD screen flashes.
In this case, no other functions except for tape ejection will work.
Eject the tape, turn off the camcorder and leave it with the cassette holder open for at least one hour. The camcorder can be used again if the ⏏ indicator does not appear when you insert the cassette and press one of the tape transport buttons.

On the Lens

If moisture condenses on the lens, no indicator appears, but the picture becomes dim. Turn off the power and do not use the camcorder for about one hour.

How to Prevent Moisture Condensation

When bringing the camcorder from a cold place to a warm place, put the camcorder in a plastic bag and allow it to adapt to room conditions over a period of time.
(1) Be sure to tightly seal the plastic bag containing the camcorder.
(2) Remove the bag when the air temperature inside it has reached the temperature surrounding it (after about 1 hour).

Tips for Using the Battery Pack

Notes on Charging

A Brand-new Battery Pack

A brand-new battery pack is not charged. Before using the battery pack, charge it completely.

Before Recharging a Used Battery Pack

- Make sure to use up the battery before recharging.
- If recording is completed before the ⟲ indicator appears in the viewfinder, you should remove the tape, slide the POWER switch to CAMERA, turn STANDBY up, and leave the camcorder until the battery indicator flashes rapidly.
- When you use the AC-S10 power adaptor or the BC-S10 portable battery charger, you can use the discharging function.
- **Charging a usable battery pack causes a lowering of battery capacity. Battery capacity can be recovered if you fully discharge and charge the battery pack again.**

After Long Storage

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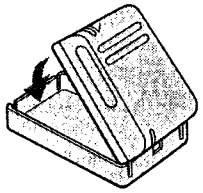
Notes on the Terminals

If the terminals (metal parts on the back) are not clean, the battery duration will be shortened. When the terminals are not clean or when the battery pack has not been used for a long time, repeatedly install and remove the battery pack. This improves the contact condition. Also, wipe the + and – terminals with a soft cloth or paper.

Be Sure to Observe the Following

- To prevent an accident caused by a short circuit, do not allow metal objects such as a necklace to touch the battery terminals. When carrying the battery pack, attach the terminal cover. **[c]**
- Keep the battery pack away from fire.
- Keep the battery pack dry.
- Do not open nor convert the battery pack.
- Do not expose the battery pack to any mechanical shock.

[c]



Maintenance Information and Precautions

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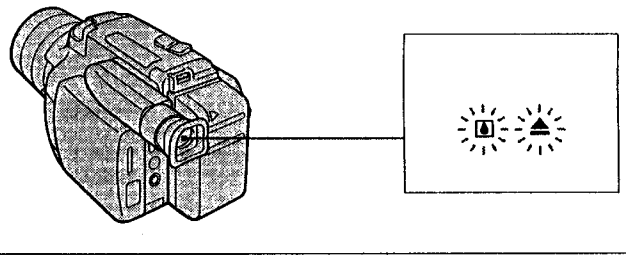


On the Surface of the Tape

If there is moisture on the surface of the tape, when you insert the cassette and press a tape transport button (▷ PLAY, etc.), the ⏏ indicator in the viewfinder or on the LCD screen flashes.
In this case, no other functions except for tape ejection will work.
Eject the tape, turn off the camcorder and leave it with the cassette holder open for at least one hour. The camcorder can be used again if the ⏏ indicator does not appear when you insert the cassette and press one of the tape transport buttons.

On the Lens

If moisture condenses on the lens, no indicator appears, but the picture becomes dim. Turn off the power and do not use the camcorder for about one hour.

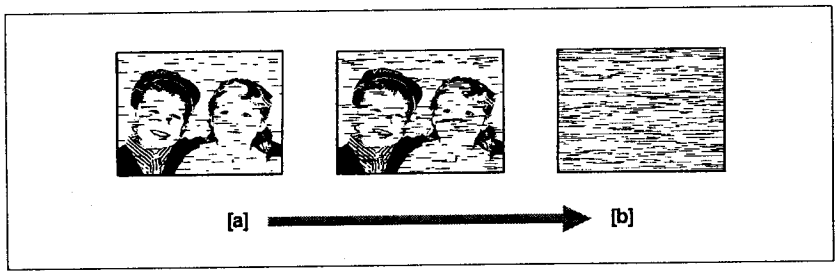
How to Prevent Moisture Condensation

When bringing the camcorder from a cold place to a warm place, put the camcorder in a plastic bag and allow it to adapt to room conditions over a period of time.
(1) Be sure to tightly seal the plastic bag containing the camcorder.
(2) Remove the bag when the air temperature inside it has reached the temperature surrounding it (after about 1 hour).

Maintenance Information and Precautions

Video Head Cleaning

To ensure normal recording and clear pictures, clean the video heads often. When the ⊗ indicator in the viewfinder or on the LCD screen flashes or playback pictures are "noisy" or hardly visible, the video heads may be dirty.



[a] Slightly dirty
[b] Very dirty

If this happens, clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied). After checking the picture, if it is still "noisy," repeat the cleaning. (Do not repeat cleaning more than 5 times.)

Caution

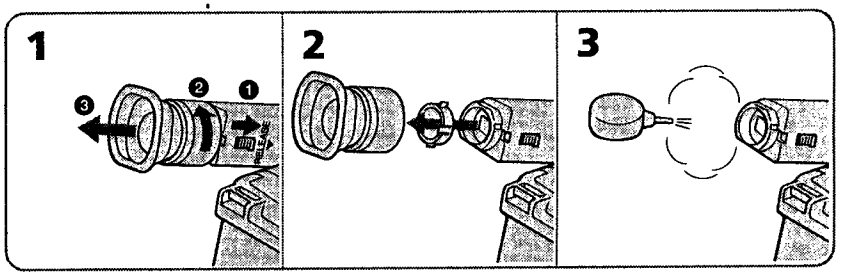
Do not use a commercially available wet-type cleaning cassette. It may damage the video heads.

Note

If the V8-25CLH cleaning cassette is not available in your area, consult your nearest Sony dealer.

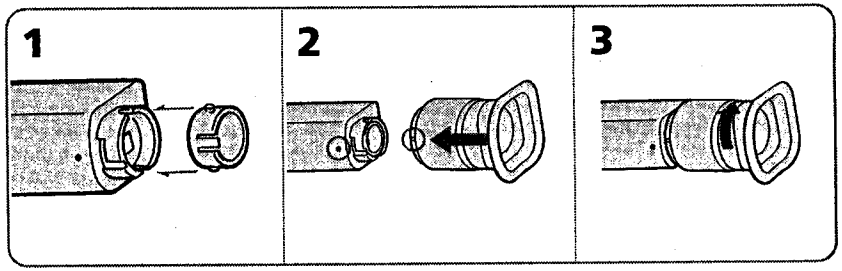
Removing Dust from Inside the Viewfinder

(1) While holding down RELEASE on the viewfinder barrel, turn the eyecup in the direction of the arrow and pull it out.
(2) Remove the small lens from inside the viewfinder.
(3) Clean the surface with a commercially available blower.



To Reattach the Eyecup

(1) Replace the small lens inside the viewfinder. Be sure to replace it with the correct side.
(2) Align the groove on the eyecup with the ● mark on the barrel.
(3) Turn the eyecup clockwise.



Precautions

Camcorder Operation

- Operate the camcorder on 6.0 V (battery pack) or 7.5 V (AC power adaptor).
- For DC or AC operation, use the accessories recommended in this manual.
- Should any solid object or liquid get inside the casing, unplug the camcorder and have it checked by Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF when not using the camcorder.
- Do not wrap up the camcorder and operate it since heat may build up internally.
- Keep the camcorder away from strong magnetic fields or mechanical vibration.
- Do not push the LCD screen.
- If the camcorder is used in a cold place, a residual image may appear on the LCD screen. This is not a malfunction.
- Constant bright points of light (red, blue, or green) may appear on the LCD screen. This is not a malfunction.
- While using the camcorder, the back of the LCD screen may heat up. This is not a malfunction.

Maintenance Information and Precautions

On Handling Tapes

Do not insert anything in the small holes on the rear of the cassette. These holes are used to sense the type, thickness of tape or if the tab is out or in.

Camcorder Care

- When the camcorder is not to be used for a long time, disconnect the power source and remove the tape. Periodically turn on the power, operate the camera and player sections and play back a tape for about 3 minutes.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on it, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.
- Clean the supplied LCD screen with the supplied LCD screen cleaner cloth to remove fingerprints.

AC Power Adaptor

Charging

- **Repeated charging while some capacity remains causes a lowering of battery capacity. However, the original battery capacity can be recovered if you use the battery completely and charge it fully again.**
- Charge the battery pack on a flat surface without vibration.
- The battery pack will get hot during charging. This is normal.

Others

- Model for the USA and Canada: One blade of the plug is wider than the other for safety purposes and will fit into the power outlet only one way. If you are unable to insert the plug fully into the outlet, contact your dealer.
- Unplug the unit from the wall (mains) outlet when not in use for a long time. To disconnect the cord (mains lead), pull it out by the plug. Never pull the cord itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the AC power cord forcibly, or put a heavy object on it. This will damage the cord and may cause a fire or an electrical shock.
- Be sure that nothing metallic comes into contact with the metal parts of the connecting plate. If this happens, a short may occur and the unit may be damaged.
- Always keep the metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.
- The unit becomes warm while in use. This is normal.
- Do not place the unit in locations that are:
  - Extremely hot or cold
  - Dusty or dirty
  - Very humid
  - Vibrating

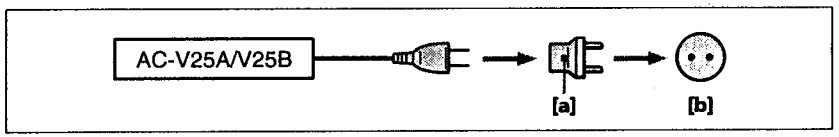
If any difficulty should arise, unplug the unit and contact your nearest Sony dealer.

Using Your Camcorder Abroad

Each country has its own electric and TV color systems. Before using your camcorder abroad, check the following points.

Power Sources

You can use your camcorder in any country with the supplied AC power adaptor within 110 V to 240 V AC, 50/60Hz.
Use a commercially available AC plug adaptor **[a]**, if necessary, depending on the design of the wall outlet **[b]**.



Difference in Color Systems

This camcorder is an NTSC system based camcorder. If you want to view the playback picture on a TV, it must be an NTSC system based TV or a PAL-M system based TV with an NTSC/PAL-M transcoder. Check the following list.

NTSC system countries
Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

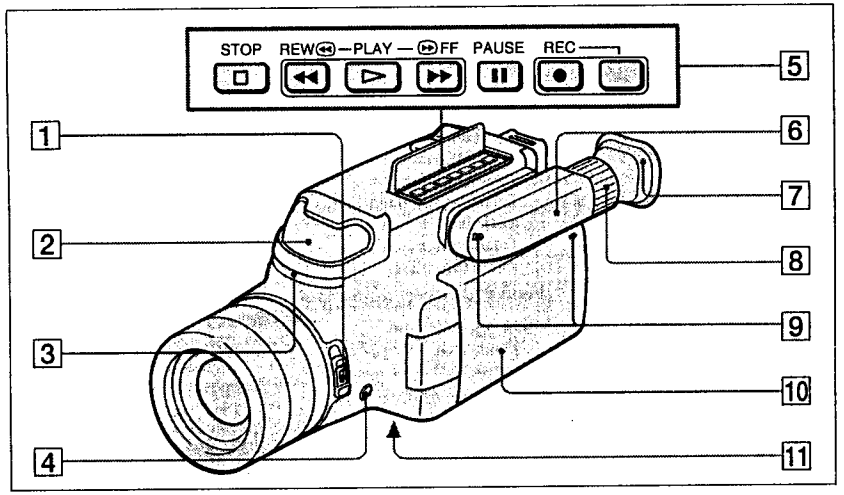
PAL system countries
Australia, Austria, Belgium, China, Denmark, Finland, former West Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc.

PAL-M system country
Brazil

PAL-N system countries
Argentina, Paraguay, Uruguay

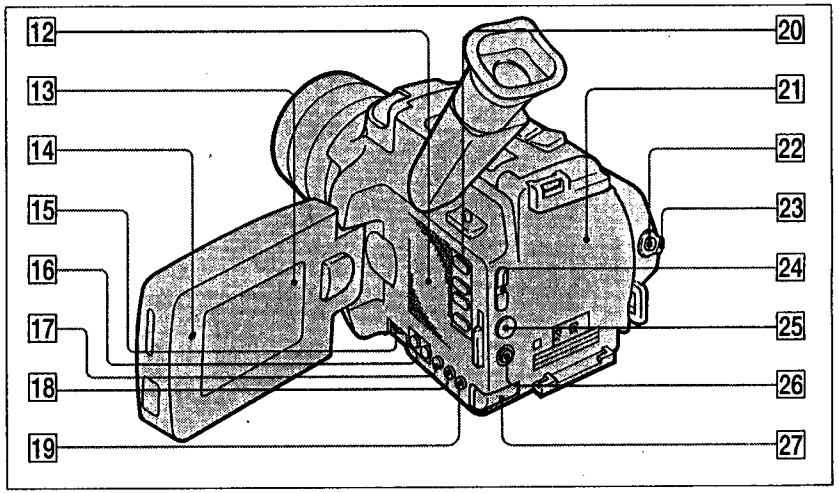
SECAM system countries
Bulgaria, France, Guiana, Hungary, Iran, Iraq, Monaco, Poland, former Soviet Union, etc.

Identifying the Parts



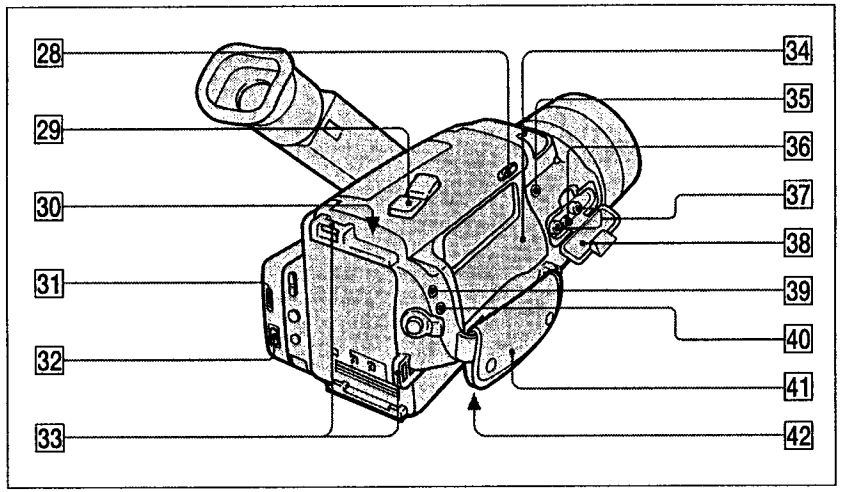
1 **POWER switch** (p. 10, 16)
2 **Built-in microphone**
3 **Remote sensor** (p. 48)
Aim the Remote Commander here for remote control.
4 **FADER button** (p. 24)
5 **Tape transport buttons** (p. 16)
- □ STOP (stop)
- ◀◀ REW (rewind)
- ▷ PLAY (playback)
- ▶▶ FF (fastforward)
- ❚❚ PAUSE
- ● REC (recording)

6 **Viewfinder** (p. 11)
7 **Eyecup**
8 **Viewfinder lens adjustment ring** (p. 11)
9 **Camera recording/battery lamp**
10 **LCD panel** (p. 11)
11 **Tripod receptacle** (p. 14)



12 **Speaker**
13 **LCD screen** (p. 11)
14 **Tally lamp**
15 **Volume dial** (p. 16)
16 **DATE(+) and TIME(NEXT) buttons** (p. 19)
17 **AGE/EVENT button** (p. 20)
18 **COUNTER RESET button** (p. 12)
19 **DISPLAY button** (p. 17)
20 **Menu operation buttons** (p. 25)
21 **Battery mounting surface** (p. 8)
22 **START/STOP button** (p. 10)
23 **STANDBY switch** (p. 10)
24 **EDITSEARCH button** (p. 15)
25 **PROGRAM AE button** (p. 23)
26 **BACK LIGHT button** (p. 22)
27 **BATT (battery eject) knob** (p. 8)

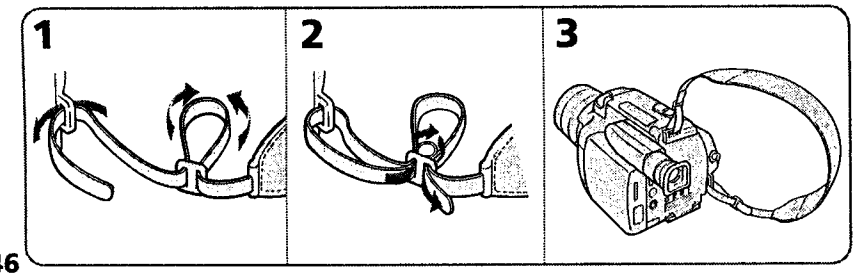
Identifying the Parts



28 **Lid lock** (p. 9)
29 **Power zoom button** (p. 13)
30 **Eject button (under the cover)** (p. 9)
31 **BRIGHT dial** (p. 11)
32 **PUSH OPEN button** (p. 11)
33 **Hooks for shoulder strap** (See below.)
34 **Cassette compartment** (p. 9)
35 **MIC jack (PLUG IN POWER)**
Connect an optional external microphone. This jack also accepts a "plug-in-power" microphone.
36 **RFU DC OUT (RFU adaptor DC output) jack**
37 **Audio/Video jacks** (p. 27)
38 **Jack cover**
39 **LANC control jack**
stands for Local Application Control Bus System. The control jack is used for controlling the tape transport of video equipment and peripherals connected to it. This jack has the same function as the jack indicated as CONTROL L or REMOTE.
40 **(Earphone) jack** (p. 17)
41 **Grip strap** (p. 14)
42 **Lithium battery compartment** (p. 30)

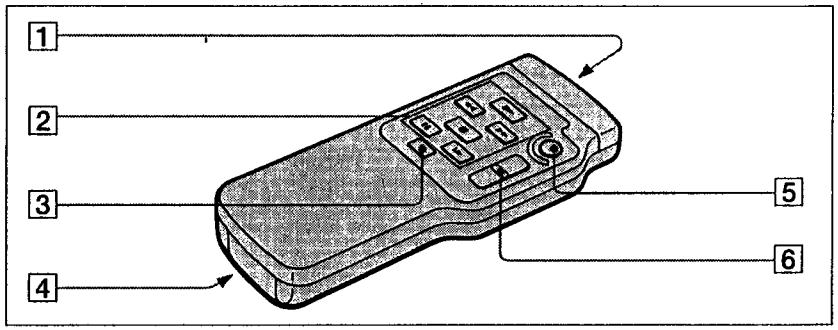
Attaching the Shoulder Strap

Attach the supplied shoulder strap to the hooks for the shoulder strap (33).



Remote Commander

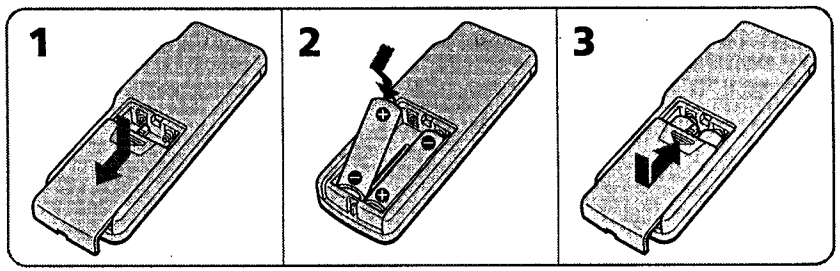
The buttons that have the same name on the Remote Commander as on the camcorder function identically.



1 **Transmitter**
Point toward the remote sensor to control the camcorder after turning on the POWER switch on the camcorder.
2 **Tape transport buttons**
3 **DISPLAY button**
Press to erase the screen indicators on the LCD screen. To display the indicators, press again.
The indicators don't appear on the TV.
4 **Size AA (R6) battery holder**
5 **START/STOP button**
6 **Power zoom button**
The zooming speed is unchangeable in the Remote Commander.

Preparing the Remote Commander

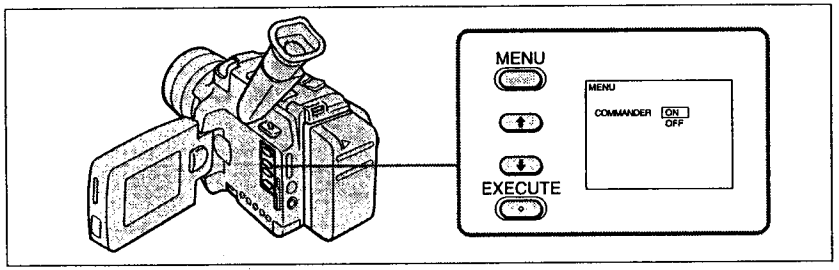
To use the Remote Commander, you must insert two size AA (R6) batteries. Use the supplied size AA (R6) batteries.
(1) Remove the battery cover from the Remote Commander.
(2) Insert both of the size AA (R6) batteries with correct polarity.
(3) Put the battery cover back onto the Remote Commander.



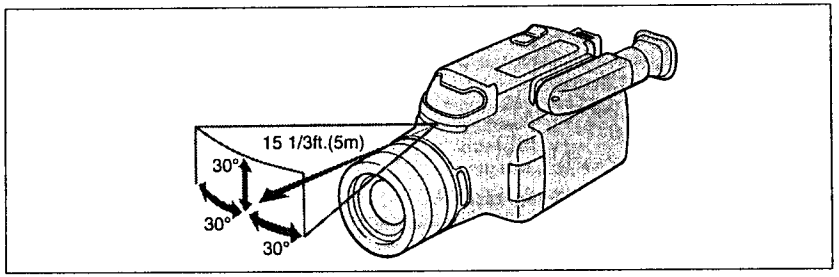
Note on battery life
The batteries for the Remote Commander last about 6 months under normal operation. When the batteries become weak or dead, the Remote Commander does not work.

To avoid damage from possible battery leakage
Remove the batteries when you will not use the Remote Commander for a long time.

Using the Remote Commander
Make sure that the COMMANDER mode is set to ON in the menu system.



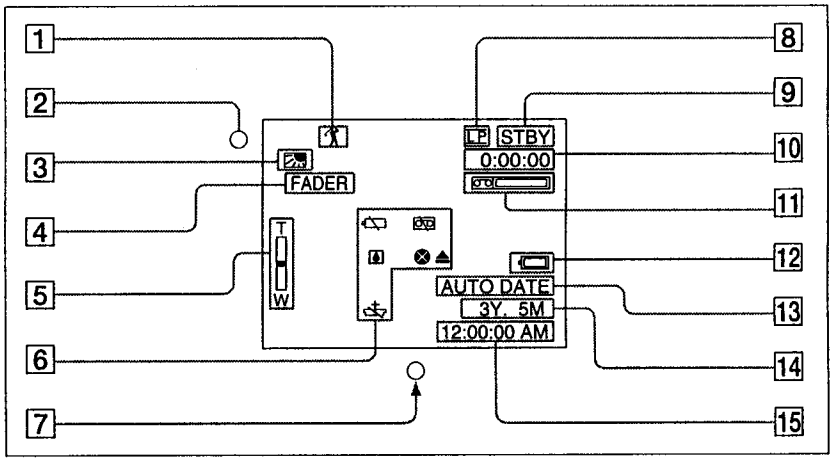
Remote Control Direction



Notes on the Remote Commander
- Keep the remote sensor away from strong light sources such as direct sunlight or illumination. Otherwise, the remote control may not be effective.
- Be sure that there is no obstacle between the remote sensor and the Remote Commander.
- This camcorder works at commander mode VTR 2. The commander modes (1, 2 and 3) are used to distinguish this camcorder from other Sony VCRs to avoid remote control misoperation. If you use another Sony VCR at commander mode VTR 2, we recommend you change the commander mode or cover the remote sensor of the VCR with black paper.

Operation Indicators

For details on each indicator, refer to the pages indicated in the parentheses.

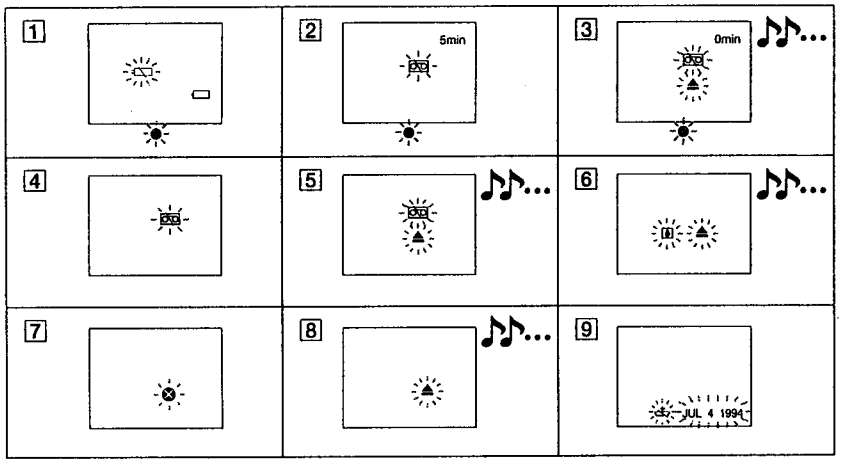


1 **PROGRAM AE indicator** (p. 23)
2 **Recording lamp (on the LCD panel)**
3 **Back Light indicator** (p. 22)
4 **FADER indicator** (p. 24)
5 **Power zoom indicator** (p. 13)
6 **Warning indicators** (p. 50)
7 **Recording lamp/Battery lamp (in the viewfinder)**
8 **Lights up when playing back a tape recorded in LP mode.**
9 **Tape transport mode** (p. 10)
10 **Tape counter** (p. 12)
11 **Remaining tape indicator**
→ → → 5min → 0min
12 **Remaining battery indicator** (p. 33, 50)
13 **AUTO DATE indicator** (p. 10, 12)
14 **AGE/EVENT indicator** (p. 20)
15 **Date or Time** (p. 19)

Indicators in the Viewfinder

Warning Indicators

If indicators in the viewfinder, on the LCD screen or a caution lamp on the camcorder flash, check the following:
♪ : you can hear the beep sound when the BEEP is set to ON.



1 The battery is weak or dead.
Slow flashing: The battery is weak.
Fast flashing: The battery is dead.

2 The tape is near the end.
The flashing is slow.

3 The tape has run out.
The flashing becomes rapid.

4 No tape has been inserted.

5 The tab on the tape is out (red).

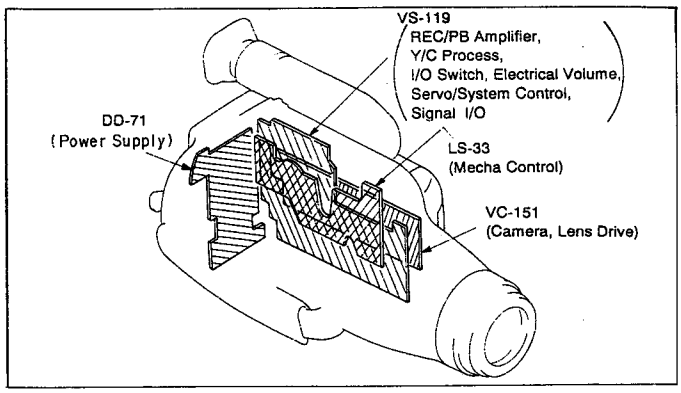
6 Moisture condensation has occurred. (p. 35)

7 The video heads may be contaminated. (p. 36)

8 Some other trouble has occurred.
Disconnect the power source and contact your Sony dealer or local authorized facility.

9 The lithium battery is weak or is not installed.

- **For printed wiring boards.**
- DD-71 board is a four-layer print board. However, the patterns of layers 2 to 3 have not been included in the diagram.
- Chip transistor



Ref.No.	Part No.	Description			Remark
L909	1-412-056-11	INDUCTOR CHIP 4.7uH			
L910	1-412-056-11	INDUCTOR CHIP 4.7uH			
L911	1-412-056-11	INDUCTOR CHIP 4.7uH			
L912	1-412-056-11	INDUCTOR CHIP 4.7uH			
L913	1-412-056-11	INDUCTOR CHIP 4.7uH			
L914	1-412-064-11	INDUCTOR CHIP 100uH			
L915	1-412-064-11	INDUCTOR CHIP 100uH			
L916	1-412-056-11	INDUCTOR CHIP 4.7uH			
L917	1-412-056-11	INDUCTOR CHIP 4.7uH			
		< TRANSISTOR >			
Q901	8-729-420-12	TRANSISTOR	XN4213		
Q902	8-729-804-41	TRANSISTOR	2SB1122-S		
Q903	8-729-823-82	TRANSISTOR	FP101		
Q904	8-729-823-84	TRANSISTOR	FP102		
Q905	8-729-823-82	TRANSISTOR	FP101		
Q906	8-729-823-82	TRANSISTOR	FP101		
Q907	8-729-823-82	TRANSISTOR	FP101		
Q909	8-729-805-25	TRANSISTOR	2SB1121-S		
Q911	8-729-402-42	TRANSISTOR	UN5213		
Q912	8-729-420-24	TRANSISTOR	2SB1218A-QRS		
Q914	8-729-402-42	TRANSISTOR	UN5213		
Q915	8-729-402-42	TRANSISTOR	UN5213		
		< RESISTOR >			
R901	1-218-872-11	METAL CHIP	11K	0.50% 1/16W	
R902	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R903	1-216-827-11	METAL CHIP	3.3K	5% 1/16W	
R904	1-216-827-11	METAL CHIP	3.3K	5% 1/16W	
R905	1-216-836-11	METAL CHIP	18K	5% 1/16W	
R906	1-216-827-11	METAL CHIP	3.3K	5% 1/16W	
R907	1-216-035-00	METAL CHIP	270	5% 1/10W	
R908	1-216-834-11	METAL CHIP	12K	5% 1/16W	
R909	1-216-031-00	METAL CHIP	180	5% 1/10W	
R910	1-216-029-00	METAL CHIP	150	5% 1/10W	
R911	1-216-029-00	METAL CHIP	150	5% 1/10W	
R912	1-216-029-00	METAL CHIP	150	5% 1/10W	
R913	1-216-041-00	METAL CHIP	470	5% 1/10W	
R915	1-216-864-11	METAL CHIP	0	5% 1/16W	
R918	1-216-819-11	METAL CHIP	680	5% 1/16W	
R919	1-216-836-11	METAL CHIP	18K	5% 1/16W	
R920	1-216-841-11	METAL CHIP	47K	5% 1/16W	
R921	1-412-052-21	INDUCTOR CHIP 1UH			
R922	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R923	1-412-052-21	INDUCTOR CHIP 1UH			
R924	1-412-979-21	INDUCTOR 1UH			
R925	1-216-825-11	METAL CHIP	2.2K	5% 1/16W	
R926	1-216-841-11	METAL CHIP	47K	5% 1/16W	
R927	1-216-864-11	METAL CHIP	0	5% 1/16W	
R928	1-216-852-11	METAL CHIP	390K	5% 1/16W	
R931	1-216-864-11	METAL CHIP	0	5% 1/16W	
R932	1-412-979-21	INDUCTOR 1UH			
R933	1-216-864-11	METAL CHIP	0	5% 1/16W	
R934	1-216-864-11	METAL CHIP	0	5% 1/16W	
R936	1-412-979-21	INDUCTOR 1UH			
R937	1-216-864-11	METAL CHIP	0	5% 1/16W	
R938	1-216-864-11	METAL CHIP	0	5% 1/16W	
R940	1-216-864-11	METAL CHIP	0	5% 1/16W	
R941	1-218-849-11	METAL CHIP	1.2K	0.50% 1/16W	
R942	1-216-864-11	METAL CHIP	0	5% 1/16W	
R944	1-216-864-11	METAL CHIP	0	5% 1/16W	
R945	1-218-847-11	METAL CHIP	1K	0.50% 1/16W	
		< TRANSFORMER >			
T901	1-426-938-11	TRANSFORMER, DC/DC CONVERTER			
**********					
*	A-7066-157-A	PD-53 BOARD, COMPLETE			
		**********			
		(Ref. No. 2,000 Series)			
*	3-960-000-01	TERMINAL, FL			
		< CAPACITOR >			
C001	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C002	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	
C003	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	
C004	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C005	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C006	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C007	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C008	1-107-520-11	TANTAL. CHIP	33uF	20% 2.5V	
C009	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C010	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C011	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C012	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C013	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C014	1-162-969-11	CERAMIC CHIP	0.0068uF	10% 25V	
C015	1-135-091-91	TANTAL. CHIP	1uF	20% 16V	
C016	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C017	1-135-091-91	TANTAL. CHIP	1uF	20% 16V	
C019	1-164-156-11	CERAMIC CHIP	0.1uF	25V	
C020	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	
C026	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C027	1-165-176-11	CERAMIC CHIP	0.047uF	10% 16V	
C028	1-162-995-11	CERAMIC CHIP	0.022uF	50V	
C031	1-164-344-11	CERAMIC CHIP	0.068uF	10% 25V	
C032	1-164-344-11	CERAMIC CHIP	0.068uF	10% 25V	
C033	1-164-344-11	CERAMIC CHIP	0.068uF	10% 25V	
C034	1-162-974-11	CERAMIC CHIP	0.01uF	50V	

Ref. No.	Part No.	Description			Remark
C035	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C036	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C037	1-135-161-21	TANTALUM CHIP	22uF	10%	10V
C038	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C039	1-135-091-91	TANTAL. CHIP	1uF	20%	16V
C040	1-135-213-21	TANTAL. CHIP	3.3uF	20%	25V
C041	1-135-179-21	TANTAL. CHIP	2.2uF	20%	16V
C042	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C043	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C044	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C045	1-164-001-11	CERAMIC CHIP	150PF	5%	50V
C046	1-164-357-11	CERAMIC CHIP	1000PF	5%	50V
C047	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C048	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C049	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C050	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C051	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C052	1-104-329-11	CERAMIC CHIP	0.1uF	10%	50V
C053	1-164-363-11	CERAMIC CHIP	560PF	5%	50V
C054	1-104-329-11	CERAMIC CHIP	0.1uF	10%	50V
C055	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C056	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C057	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C058	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C059	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C060	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C061	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C062	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C063	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C064	1-135-211-11	TANTAL. CHIP	6.8uF	20%	6.3V
C065	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V
C066	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C068	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C069	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C070	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C071	1-135-216-11	TANTALUM CHIP	10uF	20%	10V
C072	1-162-944-11	CERAMIC CHIP	18PF	5%	50V
C073	1-162-954-11	CERAMIC CHIP	120PF	5%	50V
C074	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C075	1-135-212-21	TANTAL. CHIP	2.2uF	20%	25V
C076	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C077	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C078	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C079	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C080	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C081	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C083	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C084	1-135-211-11	TANTAL. CHIP	6.8uF	20%	6.3V
C085	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C086	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C087	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C088	1-135-179-21	TANTAL. CHIP	2.2uF	20%	16V
C089	1-135-216-11	TANTALUM CHIP	10uF	20%	10V
C091	1-162-944-11	CERAMIC CHIP	18PF	5%	50V
C092	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C094	1-135-166-21	TANTALUM CHIP	47uF	10%	10V
C095	1-107-561-11	FILM CHIP	0.01uF	5%	50V
C096	1-107-561-11	FILM CHIP	0.01uF	5%	50V
C097	1-107-561-11	FILM CHIP	0.01uF	5%	50V
⚠C099	1-107-525-11	CERAMIC CHIP	18PF	10%	3KV
C101	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C102	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C103	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C104	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C105	1-162-919-11	CERAMIC CHIP	22PF	5%	50V

< CONNECTOR >

CN001	1-764-007-11	PIN, CONNECTOR (SMD) 12P	
* CN002	1-573-984-11	CONNECTOR, BOARD TO BOARD 10P	

< DIODE >

D001	8-719-420-76	DIODE	LN1251CAL-TR (TALLY)
D002	8-719-420-76	DIODE	LN1251CAL-TR (TALLY)
D003	8-719-420-14	DIODE	MA8082-M
D004	8-719-404-49	DIODE	MA111
D006	8-719-423-32	DIODE	MA8120-M
D007	8-719-422-97	DIODE	MA8091-M
D008	8-719-404-49	DIODE	MA111
D009	8-719-025-91	DIODE	MA365(E)
D010	8-719-404-49	DIODE	MA111
D011	8-719-989-33	DIODE	FC806
D012	8-719-941-86	DIODE	DAN202U
D013	8-719-404-49	DIODE	MA111
D015	8-719-049-57	DIODE	CL-170B-X-T
D016	8-719-404-49	DIODE	MA111
D018	8-719-404-49	DIODE	MA111

< IC >

IC001	8-759-251-40	IC	MB88E346PFV-G-BND-ER (ELECTRIC VOL)
IC002	8-752-067-59	IC	CXA1785R-T4 (R.G.B. DECODER)
IC003	8-759-710-82	IC	NJM2406F (DELAY)
IC004	8-759-198-04	IC	LZ93BA53 (LCD TIMING GENERATOR)
IC005	8-759-701-24	IC	NJM3414M (FRPC AMP, LPF)
IC006	8-759-521-35	IC	TL5001CD (DC/DC CONVERTER)
IC007	8-759-521-35	IC	TL5001CD (DC/DC CONVERTER)

< COIL >

L001	1-412-058-11	INDUCTOR CHIP 10uH	
L002	1-412-058-11	INDUCTOR CHIP 10uH	
L005	1-412-058-11	INDUCTOR CHIP 10uH	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

PD-53

Ref. No.	Part No.	Description	Remark
L006	1-412-955-11	INDUCTOR 22uH	
L007	1-412-062-11	INDUCTOR CHIP 47uH	
L008	1-412-746-11	INDUCTOR CHIP 10uH	
L009	1-412-963-11	INDUCTOR 100uH	
L010	1-412-963-11	INDUCTOR 100uH	
L011	1-412-963-11	INDUCTOR 100uH	
L012	1-412-028-11	INDUCTOR CHIP 4.7uH	
L013	1-424-674-11	COIL, CHOKE 22uH	
L014	1-406-924-11	COIL, CHOKE 150uH	
L015	1-412-058-11	INDUCTOR CHIP 10uH	
L016	1-412-962-11	INDUCTOR 82uH	
		< IC LINK >	
⚠PS001	1-576-122-21	LINK, IC CCP2E10 (N10)	
		< TRANSISTOR >	
Q002	8-729-117-32	TRANSISTOR 2SC4177-L6	
Q004	8-729-015-74	TRANSISTOR UN5111	
Q005	8-729-020-99	TRANSISTOR UN5215-RS-TX	
Q006	8-729-420-53	TRANSISTOR UN5115	
Q007	8-729-402-42	TRANSISTOR UN5213	
Q008	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q009	8-729-804-41	TRANSISTOR 2SB1122-S	
Q010	8-729-402-42	TRANSISTOR UN5213	
Q011	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q012	8-729-823-84	TRANSISTOR FP102	
Q013	8-729-821-55	TRANSISTOR 2SC3647S	
Q014	8-729-821-55	TRANSISTOR 2SC3647S	
Q015	8-729-015-74	TRANSISTOR UN5111	
Q016	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q017	8-729-403-27	TRANSISTOR XN4401	
		< RESISTOR >	
R001	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R002	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R003	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R004	1-216-847-11	METAL CHIP 150K 5% 1/16W	
R005	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R007	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R011	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R012	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R013	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R014	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R015	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R016	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R017	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R018	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R019	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R021	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R022	1-216-814-11	METAL CHIP 270 5% 1/16W	

Ref. No.	Part No.	Description	Remark
R023	1-218-722-11	METAL CHIP 18K 0.50% 1/16W	
R024	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R025	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R026	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R028	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R029	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R032	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R035	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R038	1-220-397-11	METAL GLAZE 4.7M 5% 1/16W	
R039	1-216-809-11	METAL CHIP 100 5% 1/16W	
R040	1-216-809-11	METAL CHIP 100 5% 1/16W	
R041	1-216-809-11	METAL CHIP 100 5% 1/16W	
R042	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R043	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R044	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R046	1-216-864-11	METAL CHIP 0 5% 1/16W	
R051	1-216-827-11	METAL CHIP 3.3K 5% 1/16W	
R052	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R053	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R054	1-216-818-11	METAL CHIP 560 5% 1/16W	
R055	1-216-821-11	METAL CHIP 1K 5% 1/16W	
R056	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R057	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R058	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R059	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R061	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R062	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R063	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R064	1-216-844-11	METAL CHIP 82K 5% 1/16W	
R065	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R066	1-216-846-11	METAL CHIP 120K 5% 1/16W	
R067	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R068	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R069	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R070	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R071	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R072	1-216-841-11	METAL CHIP 47K 5% 1/16W	
R073	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R074	1-216-843-11	METAL CHIP 68K 5% 1/16W	
R075	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R076	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R077	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R078	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R079	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R080	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R081	1-216-838-11	METAL CHIP 27K 5% 1/16W	
R082	1-216-844-11	METAL CHIP 82K 5% 1/16W	
R083	1-216-844-11	METAL CHIP 82K 5% 1/16W	
R084	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R085	1-216-837-11	METAL CHIP 22K 5% 1/16W	

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

Ref.No.	Part No.	Description			Remark
R086	1-216-841-11	METAL CHIP	47K	5%	1/16W
R087	1-216-833-11	METAL CHIP	10K	5%	1/16W
R088	1-216-833-11	METAL CHIP	10K	5%	1/16W
R089	1-216-818-11	METAL CHIP	560	5%	1/16W
R090	1-216-818-11	METAL CHIP	560	5%	1/16W
R091	1-216-818-11	METAL CHIP	560	5%	1/16W
R092	1-216-818-11	METAL CHIP	560	5%	1/16W
R093	1-216-818-11	METAL CHIP	560	5%	1/16W
R094	1-216-818-11	METAL CHIP	560	5%	1/16W
R098	1-216-813-11	METAL CHIP	220	5%	1/16W
R099	1-216-846-11	METAL CHIP	120K	5%	1/16W
R100	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R101	1-216-824-11	METAL CHIP	1.8K	5%	1/16W
R102	1-216-838-11	METAL CHIP	27K	5%	1/16W
R103	1-216-832-11	METAL CHIP	8.2K	5%	1/16W
R104	1-216-837-11	METAL CHIP	22K	5%	1/16W
R105	1-218-720-11	METAL CHIP	15K	0.50%	1/16W
R106	1-216-838-11	METAL CHIP	27K	5%	1/16W
R107	1-216-819-11	METAL CHIP	680	5%	1/16W
R108	1-216-836-11	METAL CHIP	18K	5%	1/16W
R109	1-216-837-11	METAL CHIP	22K	5%	1/16W
R110	1-218-688-11	METAL CHIP	680	0.50%	1/16W
R111	1-216-298-00	METAL CHIP	2.2	5%	1/10W
R112	1-216-813-11	METAL CHIP	220	5%	1/16W
R113	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R114	1-216-851-11	METAL CHIP	330K	5%	1/16W
R115	1-216-838-11	METAL CHIP	27K	5%	1/16W
R116	1-216-831-11	METAL CHIP	6.8K	5%	1/16W
R117	1-216-837-11	METAL CHIP	22K	5%	1/16W
R118	1-216-818-11	METAL CHIP	560	5%	1/16W
R119	1-216-818-11	METAL CHIP	560	5%	1/16W
R120	1-216-864-11	METAL CHIP	0	5%	1/16W
R121	1-216-812-11	METAL CHIP	180	5%	1/16W
R122	1-216-829-11	METAL CHIP	4.7K	5%	1/16W
R123	1-216-821-11	METAL CHIP	1K	5%	1/16W
R124	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R125	1-216-051-00	METAL CHIP	1.2K	5%	1/10W
R126	1-216-841-11	METAL CHIP	47K	5%	1/16W
R127	1-216-857-11	METAL CHIP	1M	5%	1/16W
R128	1-216-825-11	METAL CHIP	2.2K	5%	1/16W
R129	1-216-809-11	METAL CHIP	100	5%	1/16W
		< VARIABLE RESISTOR >			
RV001	1-223-733-11	RES, VAR, CARBON 10K (BRIGHT)			
RV002	1-238-853-11	RES, ADJ, CERMET 1K			
		< TRANSFORMER >			
T001	1-426-714-21	TRANSFORMER, CONVERTER			
⚠T002	1-423-869-51	TRANSFORMER, INVERTER			

Ref.No.	Part No.	Description			Remark
		< FLEXIBLE BOARD >			
W001	1-653-931-11	FP-150 FLEXIBLE BOARD 18P			
		< VIBRATOR >			
X001	1-579-466-11	VIBRATOR, CRYSTAL (3.58MHz)			
**********					
*	A-7072-055-A	SD-14 BOARD, COMPLETE			
		**********			
		(Ref. No. 2,000 Series)			
	3-960-914-01	SHEET, FP			
		< CAPACITOR >			
C502	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C503	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C505	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C506	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C507	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C508	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C509	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C510	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C512	1-165-319-11	CERAMIC CHIP	0.1uF		50V
C513	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C514	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C515	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C516	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
		< CONNECTOR >			
* CN501	1-580-055-21	PIN, CONNECTOR 2P			
CN502	1-764-007-11	PIN, CONNECTOR (SMD) 12P			
CN503	1-573-806-21	PIN, CONNECTOR (1.5MM) (SMD) 6P			
		< DIODE >			
D501	8-719-420-14	DIODE MA8082-M			
		< IC >			
IC501	8-759-701-02	IC NJM2073M (SPEAKER AMP)			
		< COIL >			
L501	1-412-060-11	INDUCTOR CHIP 22uH			
		< IC LINK >			
⚠PS501	1-576-122-21	LINK, IC CCP2E10 (N10)			
		< TRANSISTOR >			
Q501	8-729-024-39	TRANSISTOR 2SD1511-R/S(TX)			
Q502	8-729-230-63	TRANSISTOR 2SC4116-YG			

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une piéce portant le numéro spécifié.

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Ref. No.	Part No.	Description			Remark
Q504	8-729-015-76	TRANSISTOR UN5211			
Q505	8-729-015-60	TRANSISTOR 2SJ316			
Q506	8-729-015-74	TRANSISTOR UN5111			
Q507	8-729-402-42	TRANSISTOR UN5213			
Q508	8-729-025-60	TRANSISTOR 2SJ318-01STL			
Q509	8-729-015-76	TRANSISTOR UN5211			
		< RESISTOR >			
R501	1-216-841-11	METAL CHIP	47K	5% 1/16W	
R503	1-216-298-00	METAL CHIP	2.2	5% 1/10W	
R504	1-216-813-11	METAL CHIP	220	5% 1/16W	
R505	1-216-821-11	METAL CHIP	1K	5% 1/16W	
R506	1-216-830-11	METAL CHIP	5.6K	5% 1/16W	
R507	1-216-845-11	METAL CHIP	100K	5% 1/16W	
R508	1-216-864-11	METAL CHIP	0	5% 1/16W	
R509	1-216-813-11	METAL CHIP	220	5% 1/16W	
R510	1-216-831-11	METAL CHIP	6.8K	5% 1/16W	
R511	1-216-817-11	METAL CHIP	470	5% 1/16W	
R512	1-216-837-11	METAL CHIP	22K	5% 1/16W	
R513	1-216-817-11	METAL CHIP	470	5% 1/16W	
R514	1-216-845-11	METAL CHIP	100K	5% 1/16W	
R515	1-216-845-11	METAL CHIP	100K	5% 1/16W	
R516	1-216-840-11	METAL CHIP	39K	5% 1/16W	
R517	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R518	1-216-833-11	METAL CHIP	10K	5% 1/16W	
R519	1-216-839-11	METAL CHIP	33K	5% 1/16W	
		< VARIABLE RESISTOR >			
RV501	1-223-746-11	RES, VAR, CARBON 2K (VOLUME)			
		< SWITCH >			
SW501	1-692-280-11	SWITCH, PUSH (1 KEY)			
		< FLEXIBLE BOARD >			
W501	1-653-930-11	FP-148 FLEXIBLE BOARD 25P			
**********					
*	A-7066-155-A	VC-151 BOARD, COMPLETE			
		**********			
		(Ref. No. 1,000 Series)			
		< CAPACITOR >			
C601	1-162-949-11	CERAMIC CHIP	47PF	5% 50V	
C604	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C605	1-135-181-21	TANTALUM CHIP	4.7uF	20% 6.3V	
C606	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	
C607	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C608	1-104-847-11	TANTAL. CHIP	22uF	20% 4V	
C609	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	

Ref. No.	Part No.	Description			Remark
C610	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C611	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C613	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C614	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C616	1-135-091-91	TANTAL. CHIP	1uF	20% 16V	
C617	1-164-004-11	CERAMIC CHIP	0.1uF	10% 25V	
C618	1-165-176-11	CERAMIC CHIP	0.047uF	10% 16V	
C619	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C620	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C621	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C622	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C623	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C624	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C627	1-162-949-11	CERAMIC CHIP	47PF	5% 50V	
C628	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C629	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C630	1-162-946-11	CERAMIC CHIP	27PF	5% 50V	
C631	1-135-181-21	TANTALUM CHIP	4.7uF	20% 6.3V	
C632	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C633	1-162-947-11	CERAMIC CHIP	33PF	5% 50V	
C634	1-135-181-21	TANTALUM CHIP	4.7uF	20% 6.3V	
C637	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C638	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C639	1-135-181-21	TANTALUM CHIP	4.7uF	20% 6.3V	
C690	1-162-949-11	CERAMIC CHIP	47PF	5% 50V	
C701	1-163-059-91	CERAMIC CHIP	0.01uF	10% 50V	
C702	1-162-638-11	CERAMIC CHIP	1uF	16V	
C703	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C704	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C705	1-135-145-11	TANTALUM CHIP	0.47uF	10% 35V	
C706	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C708	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C709	1-135-214-21	TANTAL. CHIP	4.7uF	20% 20V	
C710	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	
C711	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	
C712	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C713	1-104-752-11	TANTAL. CHIP	33uF	20% 6.3V	
C714	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	
C715	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C716	1-164-360-11	CERAMIC CHIP	0.1uF	16V	
C717	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C718	1-162-637-11	CERAMIC CHIP	0.47uF	16V	
C719	1-162-964-11	CERAMIC CHIP	0.001uF	10% 50V	
C720	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C721	1-162-917-11	CERAMIC CHIP	15PF	5% 50V	
C722	1-135-181-21	TANTALUM CHIP	4.7uF	20% 6.3V	
C725	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C726	1-135-259-11	TANTAL. CHIP	10uF	20% 6.3V	
C727	1-162-974-11	CERAMIC CHIP	0.01uF	50V	
C728	1-162-974-11	CERAMIC CHIP	0.01uF	50V	

Ref.No.	Part No.	Description			Remark
C729	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C730	1-164-298-11	CERAMIC CHIP	0.15uF	10%	25V
C731	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C732	1-162-638-11	CERAMIC CHIP	1uF		16V
C733	1-162-638-11	CERAMIC CHIP	1uF		16V
C734	1-135-145-11	TANTALUM CHIP	0.47uF	10%	35V
C735	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C737	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C739	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C741	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C742	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C743	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C744	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C745	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C746	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C747	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C748	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C749	1-135-181-21	TANTALUM CHIP	4.7uF	20%	6.3V
C750	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C751	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C752	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C753	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C754	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C755	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C756	1-104-752-11	TANTAL. CHIP	33uF	20%	6.3V
C757	1-162-974-11	CERAMIC CHIP	0.01uF		50V
		< CONNECTOR >			
* CN601	1-764-395-21	CONNECTOR, BOARD TO BOARD 42P			
CN701	1-573-925-11	CONNECTOR, FFC/FPC (ZIF) 16P			
CN751	1-573-361-11	CONNECTOR, FFC/FPC 21P			
		< TRIMMER >			
CT701	1-141-430-51	CAP, CHIP TRIMMER			
		< DIODE >			
D701	8-719-404-49	DIODE MA111			
D702	8-719-404-49	DIODE MA111			
D703	8-719-404-49	DIODE MA111			
D705	8-719-404-49	DIODE MA111			
		< FILTER >			
FL601	1-239-766-11	FILTER, LOW PASS			
		< IC >			
IC601	8-759-278-57	IC AK6420HF-E2 (EEP ROM)			
IC602	8-759-277-18	IC MC68HC11MA8FU (SC4246) (CAMERA CONTROL)			
IC603	8-759-064-36	IC MB88346BPFV (D/A CONVERTER)			
IC604	8-759-710-29	IC NJM2235M (CHARACTER MIX)			

Ref.No.	Part No.	Description	Remark
IC609	8-752-369-24	IC CXD2150AR-T6 (CAMERA CORE)	
IC610	8-752-365-72	IC CXD2151R-T6 (SYNC GENERATOR)	
IC611	8-759-262-36	IC CXD2133BR-T6 (OPTICAL DETECTOR)	
IC614	8-759-255-09	IC uPD6461GS-802-GLG-E2 (ON SCREEN DISPLAY)	
IC701	8-752-355-07	IC CXD1267N-T4 (V DRIVE, V SUB REG)	
IC702	8-752-365-74	IC CXD1266R-T4 (TIMING GENERATOR)	
IC703	8-752-069-21	IC CXA1690Q-T4 (AGC/IRIS CONTROL, A/D BIAS AMP)	
IC704	8-759-173-24	IC AD875JST-REEL (A/D CONVERTER)	
IC705	8-752-365-76	IC CXD2407R-T4 (DEFECT COMPENSATION)	
IC751	8-759-701-24	IC NJM3414M (IRIS METER DRIVE)	
IC752	8-759-058-52	IC XRA10324AF-E2 (HALL AMP)	
IC753	8-752-365-65	IC CXD2126N-T4 (FOCUS/ZOOM PRE DRIVE)	
IC754	8-759-247-07	IC MPC17A34VMEL (FOCUS/ZOOM MOTOR DRIVE)	
IC755	8-759-031-58	IC SC7SU04F (INVERTER)	
		< COIL >	
L601	1-412-058-11	INDUCTOR CHIP 10uH	
L602	1-414-078-11	INDUCTOR 10uH	
L603	1-412-058-11	INDUCTOR CHIP 10uH	
L604	1-414-078-11	INDUCTOR 10uH	
L605	1-410-391-11	INDUCTOR CHIP 68uH	
L606	1-414-078-11	INDUCTOR 10uH	
L608	1-412-006-31	INDUCTOR CHIP 10uH	
L609	1-412-979-21	INDUCTOR 1uH	
L610	1-412-979-21	INDUCTOR 1uH	
L611	1-412-052-21	INDUCTOR CHIP 1uH	
L612	1-412-052-21	INDUCTOR CHIP 1uH	
L614	1-412-052-21	INDUCTOR CHIP 1uH	
L702	1-412-058-11	INDUCTOR CHIP 10uH	
L703	1-412-058-11	INDUCTOR CHIP 10uH	
L704	1-412-058-11	INDUCTOR CHIP 10uH	
L705	1-412-058-11	INDUCTOR CHIP 10uH	
L706	1-412-058-11	INDUCTOR CHIP 10uH	
L751	1-412-062-11	INDUCTOR CHIP 47uH	
L752	1-412-058-11	INDUCTOR CHIP 10uH	
L753	1-412-058-11	INDUCTOR CHIP 10uH	
		< TRANSISTOR >	
Q604	8-729-010-60	TRANSISTOR MSA1586-BC	
Q605	8-729-010-60	TRANSISTOR MSA1586-BC	
Q606	8-729-010-75	TRANSISTOR MSC4116-BC	
Q607	8-729-010-75	TRANSISTOR MSC4116-BC	
Q701	8-729-403-27	TRANSISTOR XN4401	
Q751	8-729-010-75	TRANSISTOR MSC4116-BC	
Q752	8-729-013-88	TRANSISTOR RN1302-TE85L	

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Ref.No.	Part No.	Description				Remark
		< RESISTOR >				
R601	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R602	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R603	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R604	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R605	1-216-864-11	METAL CHIP	0	5%	1/16W	
R606	1-216-847-11	METAL CHIP	150K	5%	1/16W	
R607	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R608	1-216-864-11	METAL CHIP	0	5%	1/16W	
R609	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R610	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R611	1-216-838-11	METAL CHIP	27K	5%	1/16W	
R612	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R613	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R619	1-216-803-11	METAL CHIP	33	5%	1/16W	
R620	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R621	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R624	1-216-864-11	METAL CHIP	0	5%	1/16W	
R626	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R627	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R628	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R629	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R630	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R631	1-216-864-11	METAL CHIP	0	5%	1/16W	
R634	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R635	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R636	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R637	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R638	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R640	1-216-815-11	METAL CHIP	330	5%	1/16W	
R642	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R643	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R645	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R646	1-216-818-11	METAL CHIP	560	5%	1/16W	
R647	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R648	1-216-818-11	METAL CHIP	560	5%	1/16W	
R649	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R650	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R651	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R652	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R654	1-216-864-11	METAL CHIP	0	5%	1/16W	
R656	1-216-864-11	METAL CHIP	0	5%	1/16W	
R658	1-216-864-11	METAL CHIP	0	5%	1/16W	
R659	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R661	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R662	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R663	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R664	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R665	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R666	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R667	1-216-820-11	METAL CHIP	820	5%	1/16W	
R668	1-216-824-11	METAL CHIP	1.8K	5%	1/16W	
R669	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R670	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R701	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R702	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R703	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R705	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R709	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R710	1-216-864-11	METAL CHIP	0	5%	1/16W	
R712	1-216-864-11	METAL CHIP	0	5%	1/16W	
R713	1-216-807-11	METAL CHIP	68	5%	1/16W	
R714	1-216-864-11	METAL CHIP	0	5%	1/16W	
R716	1-218-847-11	METAL CHIP	1K	0.50%	1/16W	
R718	1-216-807-11	METAL CHIP	68	5%	1/16W	
R719	1-218-876-11	METAL CHIP	16K	0.50%	1/16W	
R720	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R723	1-216-864-11	METAL CHIP	0	5%	1/16W	
R725	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R740	1-216-864-11	METAL CHIP	0	5%	1/16W	
R741	1-218-855-11	METAL CHIP	2.2K	0.50%	1/16W	
R742	1-218-865-11	METAL CHIP	5.6K	0.50%	1/16W	
R743	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R744	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R745	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R746	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R747	1-216-820-11	METAL CHIP	820	5%	1/16W	
R748	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R749	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R750	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R751	1-216-809-11	METAL CHIP	100	5%	1/16W	
R752	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R753	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R754	1-216-848-11	METAL CHIP	180K	5%	1/16W	
R755	1-216-855-11	METAL CHIP	680K	5%	1/16W	
R756	1-216-848-11	METAL CHIP	180K	5%	1/16W	
R757	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R758	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R759	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R760	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R761	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R762	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R764	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
		< VIBRATOR >				
X601	1-760-081-21	VIBRATOR, CERAMIC (24MHz)				
X701	1-760-320-11	VIBRATOR, CRYSTAL (28.6363MHz)				

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Ref. No.	Part No.	Description			Remark
*	A-7066-156-A	VS-119 BOARD, COMPLETE (US, Canadian)			
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*	A-7066-210-A	VS-119 BOARD, COMPLETE (E)			
		**********			
		(Ref. No. 10,000 Series)			
		< CAPACITOR >			
C101	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C102	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C103	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C104	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C106	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C107	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C108	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C109	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C110	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C111	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C112	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C113	1-164-217-11	CERAMIC CHIP	150PF	5%	50V
C114	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C115	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C116	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C117	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C118	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C119	1-162-961-11	CERAMIC CHIP	330PF	10%	50V
C120	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C121	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C122	1-162-961-11	CERAMIC CHIP	330PF	10%	50V
C123	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C124	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C128	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C131	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C134	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C136	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C137	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C143	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C144	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C145	1-104-852-11	TANTAL. CHIP	22uF	20%	6.3V
C146	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C147	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C148	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C149	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C150	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C151	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C152	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C153	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C154	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C157	1-162-916-11	CERAMIC CHIP	12PF	5%	50V
C158	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C159	1-162-922-11	CERAMIC CHIP	39PF	5%	50V
C160	1-162-946-11	CERAMIC CHIP	27PF	5%	50V
C161	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C163	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C164	1-162-942-11	CERAMIC CHIP	12PF	5%	50V
C165	1-162-956-11	CERAMIC CHIP	180PF	5%	50V
C166	1-162-958-11	CERAMIC CHIP	270PF	5%	50V
C167	1-164-382-11	CERAMIC CHIP	91PF	5%	50V
C168	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C169	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C172	1-162-921-11	CERAMIC CHIP	33PF	5%	50V
C177	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C178	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C179	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C190	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C203	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C204	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C205	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C206	1-164-489-11	CERAMIC CHIP	0.22uF	10%	16V
C207	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C208	1-135-149-21	TANTALUM CHIP	2.2uF	20%	10V
C209	1-126-246-11	ELECT CHIP	220uF	20%	4V
C210	1-162-961-11	CERAMIC CHIP	330PF	10%	50V
C211	1-135-091-91	TANTAL. CHIP	1uF	20%	16V
C212	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C213	1-135-176-21	TANTALUM CHIP	0.68uF	10%	20V
C214	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C215	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C216	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C217	1-135-091-91	TANTAL. CHIP	1uF	20%	16V
C218	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C220	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C221	1-107-682-11	CERAMIC CHIP	1uF	10%	16V
C222	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C223	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C225	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C226	1-162-926-11	CERAMIC CHIP	82PF	5%	50V
C227	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C228	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C229	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C230	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C231	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C234	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C235	1-126-207-11	ELECT CHIP	33uF	20%	4V
C237	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C238	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C239	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C240	1-164-392-11	CERAMIC CHIP	390PF	5%	50V
C241	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C242	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C243	1-135-091-91	TANTAL. CHIP	1uF	20%	16V

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Ref.No.	Part No.	Description			Remark
C244	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C245	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C247	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C251	1-162-956-11	CERAMIC CHIP	180PF	5%	50V
C258	1-164-346-11	CERAMIC CHIP	1uF		16V
C262	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C263	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C264	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C265	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C266	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C267	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C268	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C271	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C272	1-135-180-21	TANTALUM CHIP	3.3uF	20%	6.3V
C273	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C274	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C275	1-162-955-11	CERAMIC CHIP	150PF	5%	50V
C276	1-162-944-11	CERAMIC CHIP	18PF	5%	50V
C278	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C279	1-164-145-11	CERAMIC CHIP	390PF	5%	50V
C281	1-162-954-11	CERAMIC CHIP	120PF	5%	50V
C282	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C284	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C285	1-135-318-11	TANTAL. CHIP	33uF	20%	4V
C286	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C287	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C289	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C290	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C291	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C299	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C301	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C305	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C307	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C310	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C312	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C319	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C328	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C331	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C333	1-162-941-11	CERAMIC CHIP	10PF	0.5PF	50V
C334	1-162-935-11	CERAMIC CHIP	4PF	0.25PF	50V
C500	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C501	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C502	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C503	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C504	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C506	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C507	1-162-918-11	CERAMIC CHIP	18PF	5%	50V
C508	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C509	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C510	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C511	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C512	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C513	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C514	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C515	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C516	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C518	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C519	1-164-346-11	CERAMIC CHIP	1uF		16V
C521	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C522	1-164-361-11	CERAMIC CHIP	0.047uF		16V
C523	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C524	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C526	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C527	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C528	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C529	1-164-677-11	CERAMIC CHIP	0.033uF	10%	16V
C530	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C531	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C532	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C533	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C534	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C535	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C536	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C537	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C538	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C539	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C540	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C541	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C543	1-162-913-11	CERAMIC CHIP	8PF	0.5PF	50V
C544	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C545	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C547	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C548	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C549	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C550	1-128-530-11	ELECT CHIP	33uF	20%	10V
C552	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C559	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C560	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C561	1-128-004-11	ELECT CHIP	10uF	20%	16V
C562	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C563	1-164-816-11	CERAMIC CHIP	220PF	2%	50V
C564	1-164-816-11	CERAMIC CHIP	220PF	2%	50V
C565	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C566	1-162-995-11	CERAMIC CHIP	0.022uF		50V
C567	1-164-173-11	CERAMIC CHIP	0.0039uF	10%	50V
C568	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C569	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C570	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C571	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V
C572	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V

Ref.No.	Part No.	Description			Remark
C573	1-162-909-11	CERAMIC CHIP	4PF	0.25PF	50V
C574	1-216-845-11	METAL CHIP	100K	5% 1/16W	
C951	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C952	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C953	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C955	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C959	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C961	1-164-346-11	CERAMIC CHIP	1uF		16V
C962	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
C1251	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1252	1-164-505-11	CERAMIC CHIP	2.2uF		16V
C1256	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C1263	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1264	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C1268	1-135-259-11	TANTAL. CHIP	10uF	20%	6.3V
C1274	1-164-005-11	CERAMIC CHIP	0.47uF		25V
C1275	1-162-945-11	CERAMIC CHIP	22PF	5%	50V
		< CONNECTOR >			
CN101	1-691-492-21	CONNECTOR, FFC/FPC 13P			
CN102	1-580-789-21	PIN, CONNECTOR (SMD) 6P			
CN201	1-573-353-11	CONNECTOR, FFC/FPC 13P			
CN202	1-691-536-11	CONNECTOR, BOARD TO BOARD 24P			
* CN203	1-764-396-21	CONNECTOR, BOARD TO BOARD 42P			
CN206	1-573-923-21	CONNECTOR, FFC/FPC (ZIF) 14P			
CN502	1-764-708-11	CONNECTOR, FFC/FPC (LIF) 9P			
CN503	1-764-717-11	CONNECTOR, FFC/FPC (LIF) 18P			
CN504	1-695-325-11	CONNECTOR, BOARD TO BOARD 42P			
* CN505	1-764-397-21	CONNECTOR, BOARD TO BOARD 42P			
		< DIODE >			
D101	8-719-800-76	DIODE	1SS226		
D102	8-719-404-49	DIODE	MA111		
D201	8-719-027-50	DIODE	MA142WK		
D204	8-719-027-50	DIODE	MA142WK		
D208	8-719-027-50	DIODE	MA142WK		
D216	8-719-027-50	DIODE	MA142WK		
D217	8-719-404-49	DIODE	MA111		
D218	8-719-800-76	DIODE	1SS226		
D321	8-719-045-87	DIODE	MA4Z082WA-TX		
⚠D501	8-719-421-27	DIODE	MA728		
D504	8-719-404-49	DIODE	MA111		
D505	8-719-404-49	DIODE	MA111		
D1251	8-719-027-50	DIODE	MA142WK		
		< FILTER >			
FL201	1-236-757-21	FILTER, LOW PASS (C)			
		< IC >			
IC102	8-752-069-78	IC	CXA1704R-T4 (VIDEO HEAD AMP)		
IC201	8-752-068-58	IC	CXA1700R-T6 (Y/C PROCESS)		
IC203	8-752-351-22	IC	CXL5502N (DELAY)		
IC205	8-752-053-21	IC	CXA1211M (VCA)		
IC251	8-752-069-60	IC	CXA1812Q-T4 (SWITCH)		
IC501	8-759-278-57	IC	AK6420HF-E2 (EEPROM)		
IC502	8-759-295-62	IC	S-8423DFS-T2 (REG, BATTERY DETECT)		
IC503	8-759-285-21	IC	MB89098PFV-G-108-BND (MODE CONTROL)		
IC505	8-752-851-37	IC	CXP87132-009R (SERVO, SYSTEM CONTROL)		
IC506	8-759-169-11	IC	CXA1575M-E2 (DRUM MOTOR DRIVE)		
IC508	8-759-249-80	IC	MB4470PFQ-G-BND-ER (ATF SERVO, CLOG/SP, LP DETECT)		
IC951	8-759-169-02	IC	MB88344BPFV-G-BND-ER (D/A CONVERTER)		
		< COIL >			
L102	1-412-066-21	INDUCTOR CHIP 220uH			
L103	1-412-066-21	INDUCTOR CHIP 220uH			
L104	1-412-951-11	INDUCTOR 10uH			
L105	1-412-066-21	INDUCTOR CHIP 220uH			
L108	1-412-060-11	INDUCTOR CHIP 22uH			
L109	1-412-957-11	INDUCTOR 33uH			
L110	1-410-657-21	INDUCTOR CHIP 180uH			
L111	1-412-950-11	INDUCTOR 8.2uH			
L112	1-412-280-31	INDUCTOR 330uH			
L113	1-412-957-11	INDUCTOR 33uH			
L114	1-412-282-41	INDUCTOR 470uH			
L115	1-412-280-31	INDUCTOR 330uH			
L116	1-410-657-21	INDUCTOR CHIP 180uH			
L118	1-410-655-31	INDUCTOR CHIP 120uH			
L120	1-412-951-11	INDUCTOR 10uH			
L122	1-412-058-11	INDUCTOR CHIP 10uH			
L202	1-414-078-11	INDUCTOR 10uH			
L203	1-412-955-11	INDUCTOR 22uH			
L204	1-412-963-11	INDUCTOR 100uH			
L207	1-412-945-11	INDUCTOR 3.3uH			
L209	1-412-960-21	INDUCTOR 56uH			
L213	1-412-953-11	INDUCTOR 15uH			
L214	1-412-962-11	INDUCTOR 82uH			
L500	1-414-078-11	INDUCTOR 10uH			
L501	1-414-078-11	INDUCTOR 10uH			
L502	1-414-072-11	INDUCTOR 1uH			
L503	1-412-961-11	INDUCTOR 68uH			
L504	1-414-078-11	INDUCTOR 10uH			
L506	1-414-078-11	INDUCTOR 10uH			
L951	1-414-078-11	INDUCTOR 10uH			
L952	1-414-072-11	INDUCTOR 1uH			
L954	1-410-393-11	INDUCTOR CHIP 100uH			
L1252	1-414-078-11	INDUCTOR 10uH			
L1253	1-412-963-11	INDUCTOR 100uH			

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Ref. No.	Part No.	Description	Remark
		< IC LINK >	
⚠PS500	1-576-122-21	LINK, IC CCP2E10 (N10)	
⚠PS501	1-576-122-21	LINK, IC CCP2E10 (N10)	
		< TRANSISTOR >	
Q101	8-729-905-23	TRANSISTOR 2SA1576-R	
Q102	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q103	8-729-216-22	TRANSISTOR 2SA1162-G	
Q104	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q105	8-729-402-42	TRANSISTOR UN5213	
Q106	8-729-402-42	TRANSISTOR UN5213	
Q109	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q111	8-729-015-74	TRANSISTOR UN5111	
Q112	8-729-117-73	TRANSISTOR 2SC4178-F14	
Q113	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q114	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q115	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	
Q117	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q119	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q126	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q129	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q132	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q133	8-729-012-50	TRANSISTOR 2SC4400-3/4/5	
Q134	8-729-402-48	TRANSISTOR UN521E	
Q135	8-729-402-48	TRANSISTOR UN521E	
Q202	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q204	8-729-402-42	TRANSISTOR UN5213	
Q216	8-729-402-42	TRANSISTOR UN5213	
Q217	8-729-420-12	TRANSISTOR XN4213	
Q219	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q225	8-729-015-76	TRANSISTOR UN5211	
Q226	8-729-807-86	TRANSISTOR 2SB1295-UL5	
Q227	8-729-402-42	TRANSISTOR UN5213	
Q228	8-729-807-86	TRANSISTOR 2SB1295-UL5	
Q232	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q234	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q235	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q236	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q237	8-729-402-81	TRANSISTOR XN4501	
Q238	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q240	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q242	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q244	8-729-402-42	TRANSISTOR UN5213	
Q245	8-729-403-35	TRANSISTOR UN5113	
Q246	8-729-402-81	TRANSISTOR XN4501	
Q247	8-729-402-42	TRANSISTOR UN5213	
Q253	8-729-420-56	TRANSISTOR UN511E	
Q254	8-729-403-35	TRANSISTOR UN5113	
Q255	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q256	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q257	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q258	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q259	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q260	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q265	8-729-823-16	TRANSISTOR 2SC4555-5.6.7	
Q266	8-729-402-42	TRANSISTOR UN5213	
Q267	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q501	8-729-403-27	TRANSISTOR XN4401	
Q502	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q503	8-729-402-81	TRANSISTOR XN4501	
Q504	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q506	8-729-402-42	TRANSISTOR UN5213	
Q507	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q951	8-729-101-07	TRANSISTOR 2SB798-DL	
Q952	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q956	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q958	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q959	8-729-402-42	TRANSISTOR UN5213	
Q960	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1252	8-729-402-42	TRANSISTOR UN5213	
Q1257	8-729-420-24	TRANSISTOR 2SB1218A-QRS	
Q1258	8-729-230-63	TRANSISTOR 2SC4116-YG	
Q1259	8-729-420-20	TRANSISTOR XN4312	
		< RESISTOR >	
R101	1-216-864-11	METAL CHIP 0 5% 1/16W	
R102	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R103	1-216-839-11	METAL CHIP 33K 5% 1/16W	
R104	1-216-819-11	METAL CHIP 680 5% 1/16W	
R105	1-216-819-11	METAL CHIP 680 5% 1/16W	
R106	1-216-814-11	METAL CHIP 270 5% 1/16W	
R107	1-216-813-11	METAL CHIP 220 5% 1/16W	
R108	1-216-800-11	METAL GLAZE 18 5% 1/16W	
R109	1-216-804-11	METAL CHIP 39 5% 1/16W	
R110	1-216-818-11	METAL CHIP 560 5% 1/16W	
R111	1-218-875-11	METAL CHIP 15K 0.50% 1/16W	
R112	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R114	1-216-828-11	METAL CHIP 3.9K 5% 1/16W	
R118	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R119	1-216-864-11	METAL CHIP 0 5% 1/16W	
R120	1-216-831-11	METAL CHIP 6.8K 5% 1/16W	
R122	1-216-853-11	METAL CHIP 470K 5% 1/16W	
R123	1-216-836-11	METAL CHIP 18K 5% 1/16W	
R124	1-216-864-11	METAL CHIP 0 5% 1/16W	
R126	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R127	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R128	1-216-825-11	METAL CHIP 2.2K 5% 1/16W	
R130	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R132	1-216-823-11	METAL CHIP 1.5K 5% 1/16W	
R133	1-216-819-11	METAL CHIP 680 5% 1/16W	

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Ref. No.	Part No.	Description				Remark
R134	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R135	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R136	1-216-820-11	METAL CHIP	820	5%	1/16W	
R137	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R138	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R139	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R140	1-216-813-11	METAL CHIP	220	5%	1/16W	
R141	1-216-817-11	METAL CHIP	470	5%	1/16W	
R142	1-216-818-11	METAL CHIP	560	5%	1/16W	
R143	1-216-808-11	METAL CHIP	82	5%	1/16W	
R144	1-216-818-11	METAL CHIP	560	5%	1/16W	
R146	1-216-809-11	METAL CHIP	100	5%	1/16W	
R147	1-216-864-11	METAL CHIP	0	5%	1/16W	
R148	1-216-813-11	METAL CHIP	220	5%	1/16W	
R149	1-216-813-11	METAL CHIP	220	5%	1/16W	
R150	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R151	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R152	1-216-824-11	METAL CHIP	1.8K	5%	1/16W	
R153	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R154	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R158	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R159	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R160	1-216-818-11	METAL CHIP	560	5%	1/16W	
R162	1-216-818-11	METAL CHIP	560	5%	1/16W	
R163	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R164	1-216-864-11	METAL CHIP	0	5%	1/16W	
R165	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R166	1-216-816-11	METAL CHIP	390	5%	1/16W	
R171	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R175	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R178	1-216-809-11	METAL CHIP	100	5%	1/16W	
R179	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R180	1-216-809-11	METAL CHIP	100	5%	1/16W	
R181	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R185	1-216-847-11	METAL CHIP	150K	5%	1/16W	
R186	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R187	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R188	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R189	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R193	1-216-815-11	METAL CHIP	330	5%	1/16W	
R194	1-216-818-11	METAL CHIP	560	5%	1/16W	
R195	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R196	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R197	1-216-864-11	METAL CHIP	0	5%	1/16W	
R198	1-216-864-11	METAL CHIP	0	5%	1/16W	
R199	1-216-864-11	METAL CHIP	0	5%	1/16W	
R201	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R202	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R203	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R205	1-216-864-11	METAL CHIP	0	5%	1/16W	
R206	1-216-864-11	METAL CHIP	0	5%	1/16W	
R207	1-216-804-11	METAL CHIP	39	5%	1/16W	
R209	1-216-814-11	METAL CHIP	270	5%	1/16W	
R210	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R211	1-216-803-11	METAL CHIP	33	5%	1/16W	
R213	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R214	1-216-828-11	METAL CHIP	3.9K	5%	1/16W	
R215	1-216-819-11	METAL CHIP	680	5%	1/16W	
R216	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R218	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R219	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R224	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R226	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R230	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R231	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R232	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R234	1-216-864-11	METAL CHIP	0	5%	1/16W	
R235	1-218-877-11	METAL CHIP	18K	0.50%	1/16W	
R241	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R245	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R246	1-216-819-11	METAL CHIP	680	5%	1/16W	
R247	1-216-815-11	METAL CHIP	330	5%	1/16W	
R253	1-218-849-11	METAL CHIP	1.2K	0.50%	1/16W	
R255	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R256	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R259	1-218-859-11	METAL CHIP	3.3K	0.50%	1/16W	
R261	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R262	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R263	1-218-839-11	METAL GLAZE	470	0.50%	1/16W	
R265	1-216-818-11	METAL CHIP	560	5%	1/16W	
R272	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R273	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R274	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R279	1-216-819-11	METAL CHIP	680	5%	1/16W	
R280	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R281	1-216-864-11	METAL CHIP	0	5%	1/16W	
R282	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R283	1-216-864-11	METAL CHIP	0	5%	1/16W	
R285	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R286	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R288	1-216-844-11	METAL CHIP	82K	5%	1/16W	
R289	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R290	1-216-864-11	METAL CHIP	0	5%	1/16W	
R291	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R293	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R295	1-216-864-11	METAL CHIP	0	5%	1/16W	
R296	1-216-815-11	METAL CHIP	330	5%	1/16W	
R297	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R300	1-216-817-11	METAL CHIP	470	5%	1/16W	
R302	1-216-864-11	METAL CHIP	0	5%	1/16W	

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Ref.No.	Part No.	Description				Remark
R303	1-216-810-11	METAL CHIP	120	5%	1/16W	
R304	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R305	1-216-820-11	METAL CHIP	820	5%	1/16W	
R307	1-216-813-11	METAL CHIP	220	5%	1/16W	
R308	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R309	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R312	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R313	1-216-817-11	METAL CHIP	470	5%	1/16W	
R314	1-216-864-11	METAL CHIP	0	5%	1/16W	
R315	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R316	1-216-815-11	METAL CHIP	330	5%	1/16W	
R317	1-216-820-11	METAL CHIP	820	5%	1/16W	
R318	1-216-820-11	METAL CHIP	820	5%	1/16W	
R319	1-216-818-11	METAL CHIP	560	5%	1/16W	
R321	1-216-813-11	METAL CHIP	220	5%	1/16W	
R322	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R323	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R324	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R325	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R326	1-216-813-11	METAL CHIP	220	5%	1/16W	
R328	1-216-820-11	METAL CHIP	820	5%	1/16W	
R329	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R331	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R333	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R334	1-216-815-11	METAL CHIP	330	5%	1/16W	
R338	1-216-812-11	METAL CHIP	180	5%	1/16W	
R339	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R342	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R347	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R348	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R349	1-216-864-11	METAL CHIP	0	5%	1/16W	
R354	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R357	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R364	1-216-864-11	METAL CHIP	0	5%	1/16W	
R366	1-216-864-11	METAL CHIP	0	5%	1/16W	
R368	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R373	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R380	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R381	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R383	1-216-842-11	METAL CHIP	56K	5%	1/16W	
R387	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R391	1-216-864-11	METAL CHIP	0	5%	1/16W	
R398	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R399	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R500	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R501	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R502	1-216-295-91	METAL GLAZE	0	5%	1/10W	
R503	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R505	1-216-864-11	METAL CHIP	0	5%	1/16W	
R506	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R507	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R508	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R509	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R510	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R511	1-216-839-11	METAL CHIP	33K	5%	1/16W	
R512	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R513	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R514	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R515	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R517	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R518	1-216-857-11	METAL CHIP	1M	5%	1/16W	
R519	1-216-817-11	METAL CHIP	470	5%	1/16W	
R520	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R522	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R523	1-216-831-11	METAL CHIP	6.8K	5%	1/16W	
R525	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R526	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R527	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R528	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R529	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R530	1-216-019-00	METAL CHIP	56	5%	1/10W	
R531	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R532	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R533	1-217-671-11	METAL CHIP	1	5%	1/10W	
R534	1-217-671-11	METAL CHIP	1	5%	1/10W	
R535	1-217-671-11	METAL CHIP	1	5%	1/10W	
R536	1-217-671-11	METAL CHIP	1	5%	1/10W	
R537	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R538	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R539	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R540	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R541	1-216-835-11	METAL CHIP	15K	5%	1/16W	
R542	1-216-864-11	METAL CHIP	0	5%	1/16W	
R543	1-216-864-11	METAL CHIP	0	5%	1/16W	
R544	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R546	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R548	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R549	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R550	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R551	1-216-864-11	METAL CHIP	0	5%	1/16W	
R552	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R553	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R554	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R555	1-216-864-11	METAL CHIP	0	5%	1/16W	
R556	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R558	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R560	1-216-296-91	METAL GLAZE	0	5%	1/8W	
R561	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R562	1-216-851-11	METAL CHIP	330K	5%	1/16W	
R563	1-216-841-11	METAL CHIP	47K	5%	1/16W	

Ref.No.	Part No.	Description				Remark
R567	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R570	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R572	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R573	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R575	1-216-864-11	METAL CHIP	0	5%	1/16W	
R577	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R578	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R579	1-216-864-11	METAL CHIP	0	5%	1/16W	
R580	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R581	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R582	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R583	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R584	1-216-864-11	METAL CHIP	0	5%	1/16W	
R585	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R586	1-216-849-11	METAL CHIP	220K	5%	1/16W	
R587	1-216-853-11	METAL CHIP	470K	5%	1/16W	
R588	1-216-827-11	METAL CHIP	3.3K	5%	1/16W	
R589	1-216-864-11	METAL CHIP	0	5%	1/16W	
R591	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R592	1-216-841-11	METAL CHIP	47K	5%	1/16W	
R593	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R594	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R595	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R596	1-216-833-11	METAL CHIP	10K	5%	1/16W	
R597	1-216-821-11	METAL CHIP	1K	5%	1/16W	
R954	1-216-138-00	METAL CHIP	3.3	5%	1/8W	
R955	1-216-830-11	METAL CHIP	5.6K	5%	1/16W	
R956	1-216-836-11	METAL CHIP	18K	5%	1/16W	
R957	1-216-820-11	METAL CHIP	820	5%	1/16W	
R961	1-216-818-11	METAL CHIP	560	5%	1/16W	
R962	1-216-837-11	METAL CHIP	22K	5%	1/16W	
R964	1-216-822-11	METAL CHIP	1.2K	5%	1/16W	
R965	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R966	1-216-826-11	METAL CHIP	2.7K	5%	1/16W	
R967	1-216-832-11	METAL CHIP	8.2K	5%	1/16W	
R968	1-216-834-11	METAL CHIP	12K	5%	1/16W	
R969	1-216-817-11	METAL CHIP	470	5%	1/16W	
R972	1-216-823-11	METAL CHIP	1.5K	5%	1/16W	
R1251	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R1252	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1270	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1276	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R1277	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R1278	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R1281	1-216-829-11	METAL CHIP	4.7K	5%	1/16W	
R1282	1-216-825-11	METAL CHIP	2.2K	5%	1/16W	
R1284	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1285	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1400	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1401	1-216-864-11	METAL CHIP	0	5%	1/16W	
R1403	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R1404	1-216-845-11	METAL CHIP	100K	5%	1/16W	
R1406	1-216-821-11	METAL CHIP	1K	5%	1/16W	

< COMPOSITION CIRCUIT BLOCK >

Ref.No.	Part No.	Description	Remark
RB199	1-236-971-11	NETWORK, RES 0	
RB500	1-236-436-11	NETWORK, RES 100K	
RB501	1-236-432-11	NETWORK, RES 47K	
RB502	1-236-971-11	NETWORK, RES 0	
RB503	1-236-432-11	NETWORK, RES 47K	
RB504	1-236-412-11	NETWORK, RES 1.0K	
RB505	1-236-412-11	NETWORK, RES 1.0K	
RB506	1-236-412-11	NETWORK, RES 1.0K	
RB507	1-236-448-11	NETWORK, RES 1.0M	
RB508	1-236-436-11	NETWORK, RES 100K	
RB509	1-236-432-11	NETWORK, RES 47K	
RB510	1-236-412-11	NETWORK, RES 1.0K	
RB512	1-236-412-11	NETWORK, RES 1.0K	
RB513	1-236-971-11	NETWORK, RES 0	
RB514	1-236-907-11	RESISTOR, NETWORK (CHIP TYPE) 100K	
RB515	1-236-904-11	RESISTOR, NETWORK (CHIP TYPE) 1.0K	
RB516	1-236-904-11	RESISTOR, NETWORK (CHIP TYPE) 1.0K	
RB518	1-236-971-11	NETWORK, RES 0	
RB519	1-236-971-11	NETWORK, RES 0	
RB520	1-236-904-11	RESISTOR, NETWORK (CHIP TYPE) 1.0K	
RB521	1-236-412-11	NETWORK, RES 1.0K	
RB522	1-236-448-11	NETWORK, RES 1.0M	
RB523	1-236-432-11	NETWORK, RES 47K	
RB524	1-236-908-11	RESISTOR, NETWORK (CHIP TYPE) 10K	
RB525	1-236-424-11	NETWORK, RES 10K	
RB526	1-236-908-11	RESISTOR, NETWORK (CHIP TYPE) 10K	
RB527	1-236-424-11	NETWORK, RES 10K	
RB528	1-236-424-11	NETWORK, RES 10K	
RB529	1-236-424-11	NETWORK, RES 10K	
RB530	1-236-424-11	NETWORK, RES 10K	
RB531	1-236-424-11	NETWORK, RES 10K	
RB532	1-236-424-11	NETWORK, RES 10K	
RB533	1-236-412-11	NETWORK, RES 1.0K	
RB534	1-236-412-11	NETWORK, RES 1.0K	
RB535	1-236-908-11	RESISTOR, NETWORK (CHIP TYPE) 10K	
RB536	1-236-412-11	NETWORK, RES 1.0K	
RB537	1-236-412-11	NETWORK, RES 1.0K	
RB542	1-236-412-11	NETWORK, RES 1.0K	
RB543	1-236-412-11	NETWORK, RES 1.0K	
RB544	1-236-412-11	NETWORK, RES 1.0K	
RB548	1-236-416-11	NETWORK, RES 2.2K	
RB549	1-236-971-11	NETWORK, RES 0	
RB550	1-236-971-11	NETWORK, RES 0	
RB551	1-236-412-11	NETWORK, RES 1.0K	
RB552	1-236-412-11	NETWORK, RES 1.0K	

Ref. No.	Part No.	Description	Remark
RB553	1-236-412-11	NETWORK, RES 1.0K	
RB554	1-236-971-11	NETWORK, RES 0	
RB555	1-236-971-11	NETWORK, RES 0	
		< VARIABLE RESISTOR >	
RV202	1-238-852-11	RES, ADJ, CERMET 470	
		< VIBRATOR >	
X201	1-579-365-21	VIBRATOR, CRYSTAL (3.58MHz)	
X501	1-579-550-11	VIBRATOR, CRYSTAL (32kHz)	
X502	1-760-314-11	VIBRATOR, CRYSTAL (11.895MHz)	
		< VIBRATOR >	
XTL501	1-579-369-21	VIBRATOR (10MHz)	

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MISCELLANEOUS
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113	1-467-835-21	SWITCH BLOCK, CONTROL (CK)	
201	1-467-649-31	SWITCH BLOCK, CONTROL (FK)	
207	1-691-471-11	CONNECTOR, TRANSLATION 11P	
211	1-651-935-11	FP-95 FLEXIBLE BOARD	
219	1-651-936-11	FP-96 FLEXIBLE BOARD	
222	1-651-891-11	FP-52 FLEXIBLE BOARD	
254	1-651-904-11	FP-97 FLEXIBLE BOARD	
264	1-547-558-21	FILTER BLOCK, OPTICAL	
301	8-848-704-01	DEVICE, LENS LSV-140A (TYPE I)	
351	1-547-716-11	LENS, ZOOM (VCL-5412WA) (TYPE II)	
401	1-547-739-11	LENS, ZOOM (VCL-5412WB) (TYPE III)	
462	1-467-479-21	PLATE, LIGHT GUIDE BLOCK	
801	A-7049-501-A	DRUM ASSY, UPPER (DGR-78-R)	
814	1-568-323-11	CONNECTOR, BOARD TO BOARD 4P	
871	1-641-643-12	FP-444 FLEXIBLE BOARD	
872	1-691-254-13	CONNECTOR, TRANSLATION 10P	
874	1-641-639-13	FP-442 FLEXIBLE BOARD	
875	1-645-271-11	FP-575 FLEXIBLE BOARD	
⚠BL001	1-517-300-11	TUBE, FLUORESCENT (BACK LIGHT)	
IC691	A-7030-368-A	CCD BLOCK ASSY (054 SERVICE) (CCD IMAGER)	
J201	1-537-726-11	TERMINAL BOARD	
LCD901	1-810-328-21	DISPLAY MODULE, LIQUID CRYSTAL	
M001	1-542-162-11	MICROPHONE UNIT	
M901	A-7048-564-A	DRUM ASSY (DGH-78A-R)	
M902	8-835-477-01	MOTOR, DC SCE-0101A (CAPSTAN)	
M903	A-7040-304-A	MOTOR BLOCK ASSY, LM (LOADING)	
M905	1-698-364-01	MOTOR ASSY, FOCUS	
M906	1-698-363-01	MOTOR ASSY, ZOOM	
M907	3-708-888-01	METER, IG (IRIS)	
M908	3-708-889-01	MOTOR ASSY, FOCUS	
M909	3-708-887-01	MOTOR ASSY, ZOOM	
M910	3-708-898-01	IRIS ASSY	
M911	3-708-897-01	MOTOR ASSY, FOCUS	
M912	3-708-896-01	MOTOR ASSY, ZOOM	
S001	1-572-986-11	SWTICH, ROTARY (ENCODER)	
S002	1-572-987-11	SWITCH, PUSH (3KEY)	(REC PROOF, ME/MP, MP/MP-HG)
S005	1-570-771-21	SWITCH (C DOWN)	
SP501	1-504-666-11	SPEAKER (4CM)	
⚠V901	1-452-566-11	CRT ASSY (M01KKX07WB10)	
W500	1-651-889-11	FP-48 FLEXIBLE BOARD	
W501	1-642-186-11	FP-437 FLEXIBLE BOARD	
W501	1-653-930-11	FP-148 FLEXIBLE BOARD	
⚠W502	1-526-978-51	SOCKET ASSY, CRT	
W001	1-653-931-11	FP-150 FLEXIBLE BOARD	

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ACCESSORIES & PACKING MATERIALS
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	1-467-574-21	REMOTE COMMANDER (RMT-708)	
	1-528-389-11	BATTERY, MANGANESE (R6P) (NS-H)	
	1-574-039-11	CORD, CONNECTION	(A/V connecting cable (monaural)) (1.5m)
	3-759-182-21	MANUAL, INSTRUCTION (ENGLISH) (US, CND)	
	3-759-182-31	MANUAL, INSTRUCTION (FRENCH) (CND)	
	3-759-540-11	MANUAL, INSTRUCTION (ENGLISH, SPANISH) (E)	
	3-759-540-41	MANUAL, INSTRUCTION (CHINESE) (E)	
*	3-795-581-21	SAFEGUARD (SONY), IMPORTANT (US)	
	3-951-912-01	BELT (S), SHOULDER	
	3-956-563-01	CLEANER, LCD	
*	3-958-570-41	INDIVIDUAL CARTON (US, CND)	
*	3-958-570-81	INDIVIDUAL CARTON (E)	
*	3-960-746-01	CUSHION, ACC	
*	3-960-747-01	CUSHION (LOWER)	
**	AC-V25A/V25B	AC POWER ADAPTOR	
***	NP-66	BATTERY PACK	

Note.

** MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.
*** MARK PARTS IS AVAILABLE AS AN OPTIONAL ACCESSORY.

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****
HARDWARE LIST
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#1	7-627-553-47	PRECISION SCREW +P 2X4 TYPE 3
#2	7-685-103-19	+ PTPWH (2X5)

Be sure to read "Note on the CCD Imager replacement" on page 4-6(CCD-FX403/FX435/FX530/FX630)when changing the CCD imager.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une piéce portant le numéro spécifié.

• Only the following parts are different for the AU-175 board.

Ref. No.	Part No.	Description	Location (CCD-FX430) PRINTED	Location (CCD-FX430) SCHEMATIC	(CCD-FX430)	(CCD-FX730V)
*	A-7063-943-A	AU-157 BOARD, COMPLETE (Ref. No. 5,000 Series)	—	—	○	×
*	A-7066-153-A	AU-175 BOARD, COMPLETE (Ref. No. 5,000 Series)	—	—	×	○
R425	1-216-810-11	METAL CHIP 120 5% 1/16W	D-2	E-9	○	×
R425	1-216-864-11	METAL CHIP 0 5% 1/16W	—	—	×	○

○: MOUNT
×: NO MOUNT

• Only the following parts are different for the MA-209 board.

Ref. No.	Part No.	Description	Location (CCD-FX430) PRINTED	Location (CCD-FX430) SCHEMATIC	(CCD-FX430)	(CCD-FX730V)
*	A-7063-941-A	MA-197 BOARD, COMPLETE (Ref. No. 6,000 Series)	—	—	○	×
*	A-7066-152-A	MA-209 BOARD, COMPLETE (Ref. No. 6,000 Series)	—	—	×	○

○: MOUNT
×: NO MOUNT

• Only the following parts are different for the SL-38 board.

Ref. No.	Part No.	Description	Location (CCD-FX430) PRINTED	Location (CCD-FX430) SCHEMATIC	(CCD-FX430)	(CCD-FX730V)
*	A-7072-000-A	SL-38 BOARD, COMPLETE (Ref. No. 4,000 Series)	—	—	○	○
CN500	1-691-473-21	CONNECTOR, FFC/FPC 7P	A-7	C-4	○	×
CN500	1-691-481-11	CONNECTOR, FFC/FPC 7P	—	—	×	○
CN501	1-691-472-21	CONNECTOR, FFC/FPC 6P	A-5	D-4	○	×
CN501	1-691-480-11	CONNECTOR, FFC/FPC 6P	—	—	×	○

○: MOUNT
×: NO MOUNT

1. Power Supply Voltage Check (PD-53 Board)

Mode	Record
Measuring Instrument	Digital voltmeter
LCD 5V check	
Measurement Point	Pin ⑦ of CN001
Specified Value	4.85 ± 0.05 Vdc
DAC 5V check	
Measurement Point	Pin ⑤ of CN001
Specified Value	4.85 ± 0.05 Vdc

2. PNL –8V Adjustment (PD-53 board)

Mode	Record
Signal	Color bar signal whose chroma signal and burst signal are turned off
Measurement Point	Pin ② of CN002
Measuring Instrument	Digital voltmeter
Adjustment Element	RV002
Specified Value	–8.0 ± 0.05 Vdc

Adjusting method:

1) Adjust the voltage to specified value with RV002.

3. EVR Initial Data Input

Mode	STOP
Signal	Arbitary
Adjustment Page	D

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Select page D, and input the data in the following table.
   Note: To write in the nonvolatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time the data is set.

Address	Data
B0 (BRIGHT)	55
B1	90
B2	95
B3 (SUB BRI. R)	A2
B4 (SUB BRI. B)	70
B5 (CONTRAST)	99
B6 (VCO)	CD
B7 (V COM)	7B
B8	6B
B9	78
BA (H. POSITION)	B7
BB	92

4. Bright Adjustment (PD-53 board)

Adjust to the proper LCD panel driving video signal level.
If it is not correct, the image will be saturated (whitish) or blackish.

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ③ of CN002 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ⑤ of IC005
Adjustment Page	D
Adjustment Address	B0 (BRIGHT)
Specified Value	A=4.6 ± 0.1V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: B0, and adjust the amplitude level (A) of the VG signal to the specified value.
   Amplitude: Level difference between the reverse waveform pedestal and non-reversed waveform pedestal.
3) Press the PAUSE button of the adjusting remote commander.

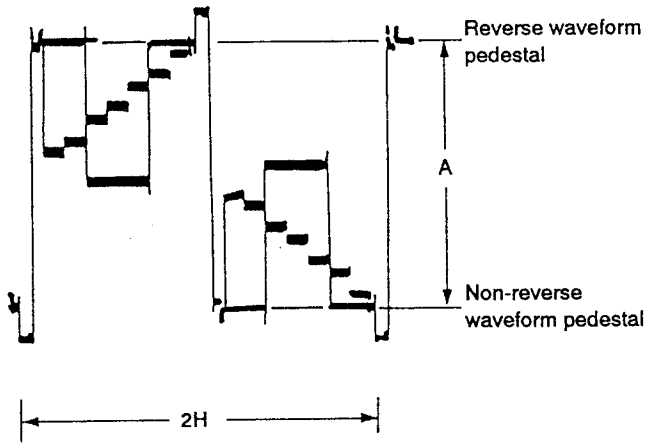


Fig. 7-3-33.

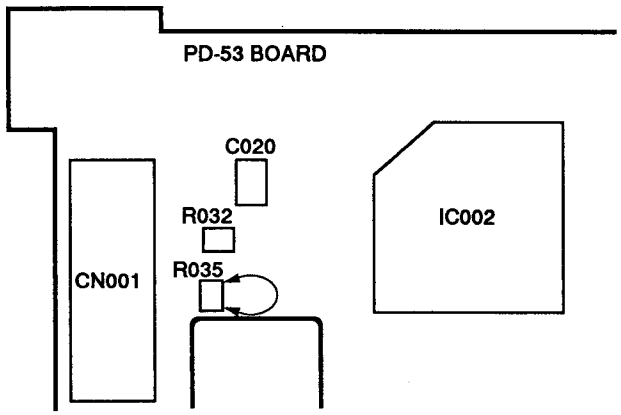
5. VCO Adjustment (PD-53 board)

Set the free running frequency of the VCO.
If it is not correct, the image will waver.

Mode	STOP
Signal	No signal
Measurement Point	Pin ⑧ of CN002 ($\overline{HSY}$)
Measuring Instrument	Frequency counter
Adjustment Page	D
Adjustment Address	B6 (VCO CONT)
Specified Value	f=15734 ± 30 Hz

Connection:

1) Short-circuit R035 with a jumper wire.



Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: B6 and adjust the frequency to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

6. Horizontal Display Position Adjustment (PD-53 board)

Adjust the position of the image.
If its position is not correct, it will slip to the right or left.

Mode	Record
Signal	Color bar
Measurement Point	CH1: Pin ⑦ of CN002 (H SYNC) CH2: Pin ⑥ of CN002 (SPD)
Measuring Instrument	Oscilloscope
Adjustment Page	D
Adjustment Address	BA (H POSITION)
Specified Value	T=3.0 ± 0.4 μsec

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: BA, and adjust the delay time (T) to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

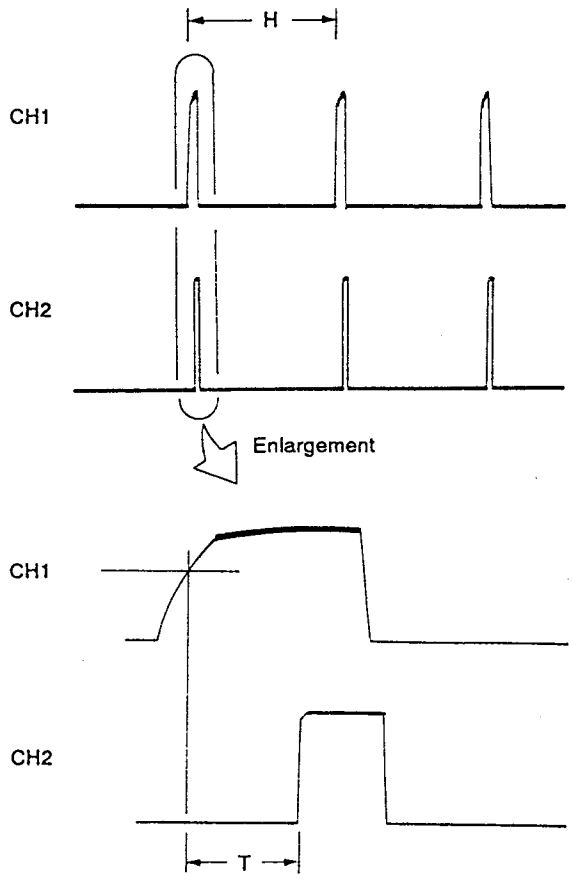


Fig. 7-3-34.

7. Contrast Adjustment (PD-53 board)

Set the contrast of the image.
If the contrast is not correct, the image will be blur (whitish) or saturated.

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Pin ③ of CN002 (VG)
Measuring Instrument	Oscilloscope External trigger: Pin ⑤ of IC005
Adjustment Page	D
Adjustment Address	B5 (CONTRAST)
Specified Value	A=3.0 ± 0.1V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: B5, and adjust the voltage (A) between the white (100%) and pedestal to the specified value.
3) Press the PAUSE button of the adjusting remote commander.

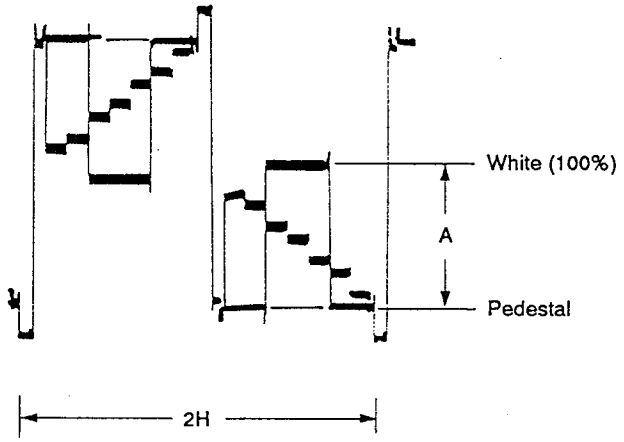


Fig. 7-3-35.

8. V COM Adjustment

Adjust to the proper DC bias of the common polarity drive signal of the LCD panel. If it is not correct, the image will be rough, flickers will be produced easily, and vertical lines will stand out.

Mode	Playback • pause
Signal	Alignment tape: For checking operations (WR5-5NSP) Color bar section
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	B7 (V COM CONT)
Specified Value	Vertical Lines with intervals of 3 dots between them at the noise bar disappears.

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: B7, and adjust so that the vertical lines with intervals of 3 dots between them at the noise bar disappears.
3) Press the PAUSE button of the adjusting remote commander.

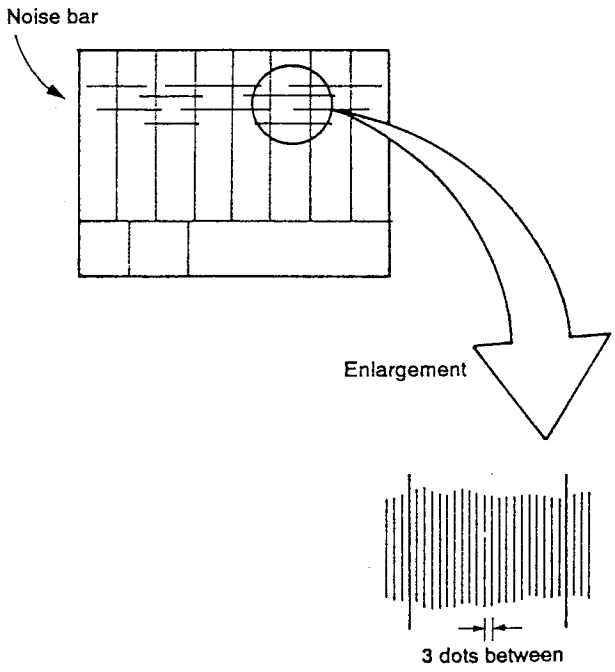


Fig. 7-3-36.

9. White Balance Preset Adjustment (1) (PD-53 board)

White balance rough adjustment (1)

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ③ of CN002 (VG) CH2: Pin ⑤ of CN002 (VR)
Measuring Instrument	Oscilloscope External trigger: Pin ⑤ of IC005
Adjustment Page	D
Adjustment Address	B3 (SUB BRIGHT R)
Specified Value	Amplitude level difference between VR and VG signals=0 ± 0.1V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: B3 and equalize the amplitude of VR and VG signal.
   Amplitude: Level difference between the reverse waveform pedestal and non-reverse waveform pedestal.
3) Press the PAUSE button of the adjusting remote commander.

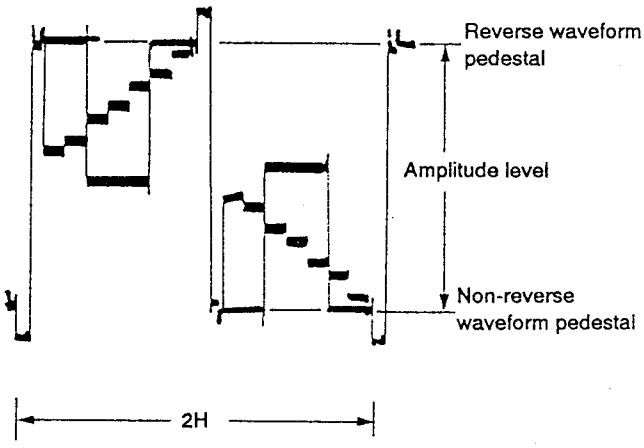


Fig. 7-3-37.

10. White Balance Preset Adjustment (2) (PD-53 board)

White balance rough adjustment (2)

Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	CH1: Pin ③ of CN002 (VG) CH2: Pin ① of CN002 (VB)
Measuring Instrument	Oscilloscope External trigger: Pin ⑤ of IC005
Adjustment Page	D
Adjustment Address	B4 (SUB BRIGHT B)
Specified Value	Amplitude level difference between VR and VG signals=0 ± 0.1V

Adjusting method:

1) Release the protect.
   Page: 1, address: 00, data: 01
2) Change the data of page: D, address: B4 and equalize the amplitude of VB and VG signal.
   Amplitude: Level difference between the reverse waveform pedestal and non-reverse waveform pedestal.
3) Press the PAUSE button of the adjusting remote commander.

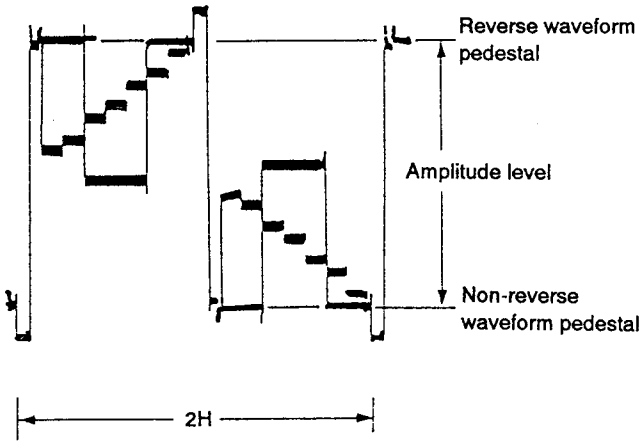


Fig. 7-3-38.

11. White Balance Adjustment

Adjust to the proper white balance level.
If it is not correct, the color reproducibility of the LCD panel will be poor.

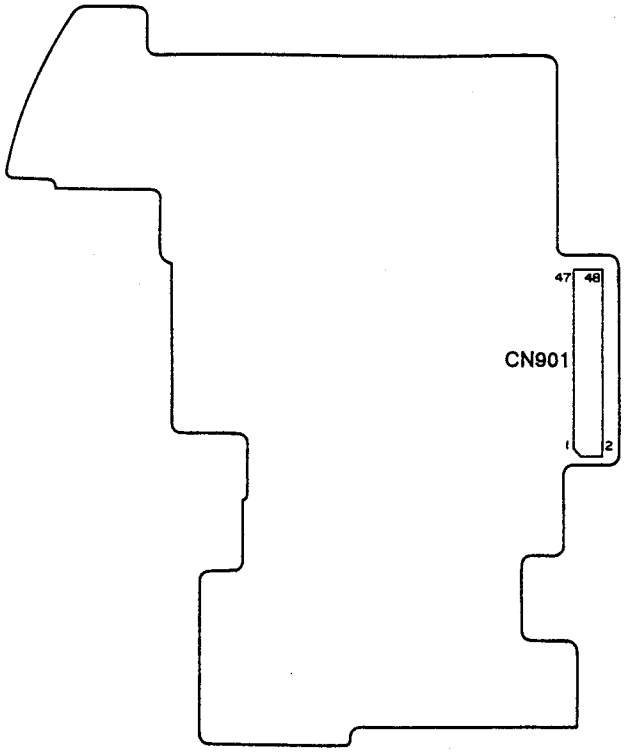
Mode	Record
Signal	Color bar signal whose chroma and burst signals are turned off
Measurement Point	Check on the LCD display
Measuring Instrument	
Adjustment Page	D
Adjustment Address	B3 (SUB BRIGHT R), B4 (SUB BRIGHT B)
Specified Value	The display should not be colored

Adjusting method:

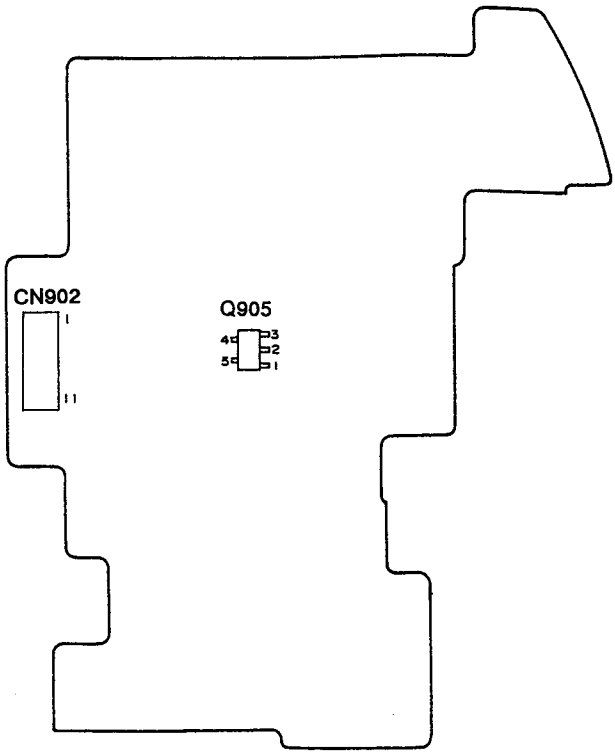
1) Release the protect.
   Page: 1, address: 00, data: 01
2) Check that the LCD display is not colored. If it is, change the data of address: B3 and address: B4 of page: D, and adjustment the display is not colored.
3) Press the PAUSE button of the adjusting remote commander.

3-9. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

DD-71 BOARD (COMPONENT SIDE)



DD-71 BOARD (CONDUCTOR SIDE)



PD-53 BOARD (CONDUCTOR SIDE)